UK'S BRIGHTEST MAGAZINE FOR THE COMMODORE 64

YOUR 64 & VIC 20

MARCH 1985

95p No.7



GAME OF THE MONTH

RAID OVER MOSCOW

Two Tribes Go To War!

COMMUNICATIONS

COMPUNET VS MICRONET

Battle Of The Networks!

WORDPROCESSORS

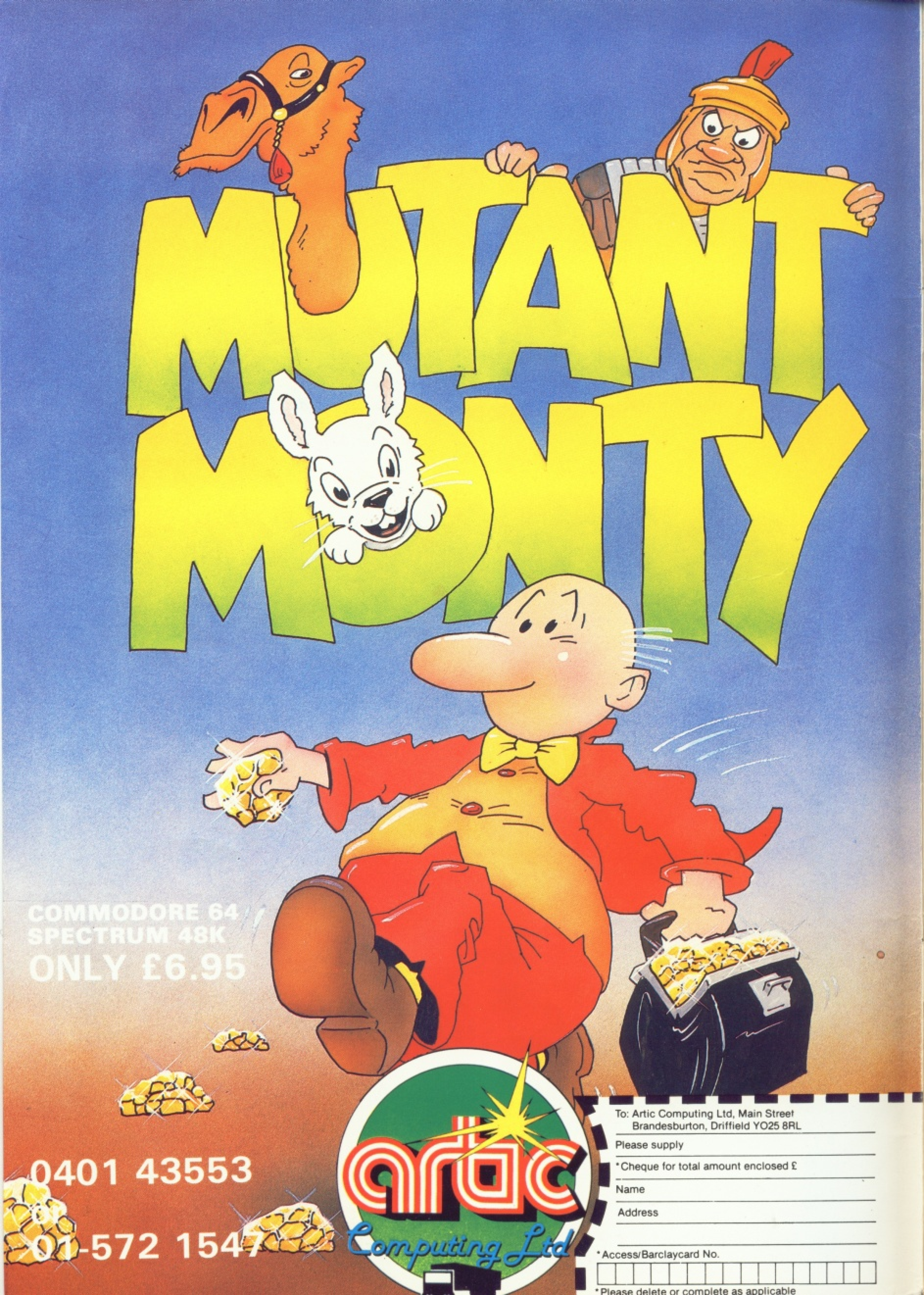
WRITE ON!

Six Of The Best?

TALKIN' 64

THE MINTER VIEW!

Life With The Llamas


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Y64 MENU

Y64 SPECIAL
WORD PROCESSORS

41

Getting Your Word's Worth If the advertisements are to be believed, a wordprocessor will improve your productivity, make writing a pleasure instead of a chore and allow you to create professional-looking letters and documents.

But what exactly *is* a wordprocessor and how do you choose the right one for you? *Y64* examines six best-selling packages, comparing features, ease of use, quality of documentation and value for money. Don't buy a wordprocessor without reading this first! *Valerie Buckle* and *Keith Bowden*

REVIEW

22

Compunet vs. Micronet Everyone seems to be getting on-line these days, but which network offers more to 64 users? We put Micronet and Compunet to the test. *Allen Webb*

GAMES

29

Action Replay Fight Nordic wars, practice a spot of social climbing in Hampstead, steer clear of the Dungeons of Ba and, well, *Di's Baby* could only have been produced by Bad Taste Software. *Steve Malone*



36

Raid Over Moscow Nuking Moscow might not be the most tasteful plot to a game, but it certainly wins in the playability stakes.



WIN! WIN! WIN!



63

Competition Ghostbustin' makes you feel good ... and so should our competition 'cos we've got 100 copies to give away! Not to mention a 1541 disk drive and other goodies.

PROGRAMMING

53

Scratchpad Add medium-resolution plotting to your 64's graphics capabilities with our easy to use listing! Also the rest of the demo routines for last month's scrolling routine. *Mike Hart* and *Brian Rushby*

61

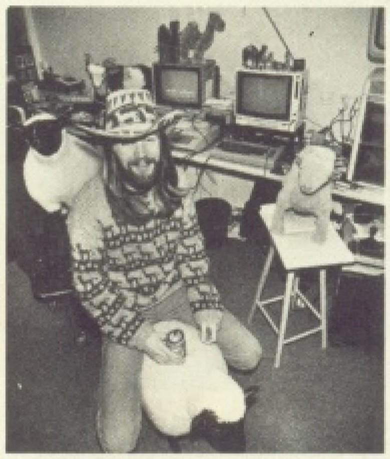
Keyboard Kapers Exercise your grey cells with our 3D noughts and crosses program! *R Blunt*

CORE MATERIAL

Open Access Page 3
If it's happening to the 64, it's in Open Access.

Missives Page 11
More support for an upgraded 64, a whole host of games hints, the Jet Set Willy bug ... you said it.

Choice 20 Page 14
Ghostbusters is new in at number 10, but *International Football* is *still* at number 1! There's no chart-rigging here ... your votes are all that count.



Talkin' 64 Page 72
Why is that man Minter so obsessed with small furry animals? *Y64* talks to the man behind Llamasoft.

Back Issues Page 19
Both issues 1 and 2 are already sold out, so get your orders in fast!

Subscriptions Page 19
Make sure you're never without!

FREE READER SERVICE

Classified ads Page 50
Sell your unwanted gear, pick up a bargain, swap some software — our readers classifieds are free!

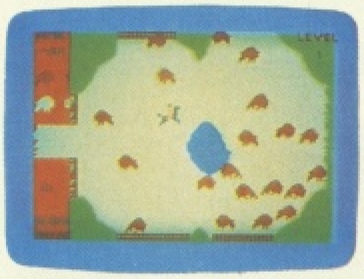
Cover illustration by Mark Watkinson

CONTACTING Y64

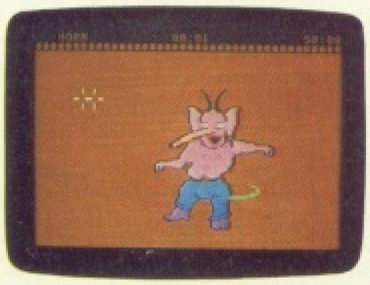
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Stephen England
ADVERTISING ENQUIRIES
Alan Towler

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Tuesdays and Thursdays
2pm-5pm only, please

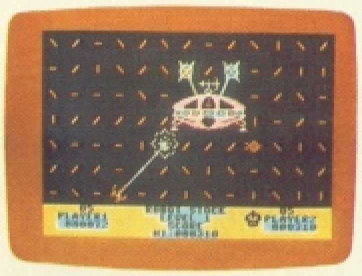
DRIVE A HARD SOFT BARGAIN.


'Buffalo Round Up'


'Spatial Billiards'


'Dancing Monster'


'Save Me Brave Knight'


'Photon Reflection'

It's not every day you get offered a bargain as good as this: five games in one package for just £9.99.

And not just any old games, but really outstanding, exciting and unusual ones.

No other games collection comes anywhere near the 'Fantasy Five.' Each game is unique and demands very different talents of the player.

In 'Buffalo Round Up' you can see how you'd have made out as a wrangler in the Wild West. You have to be both skilful and fast to corral the buffalo before they stampede off into the desert.

Then you can test your skills in three unique variations of the traditional game of billiards, with 'Spatial Billiards.' It's billiards in 3-D in a gravity-free room!

In 'Dancing Monster' a wicked wizard has cast a spell on a beautiful princess. To stop his evil, you have to shoot off his horns, eyes, nose, ears and so on while he continues to dance. Defeat the monster, and you'll be astonished by his transformation into...?



FIVE GAMES FOR ONLY £9.99

Then you can don your shining armour and rescue your true love from her evil captors' castle. 'Save Me Brave Knight' is full of evil monsters and fire-breathing dragons, and is exceptional in its graphic style.

If that sounds a little down-to-earth, how about 'Photon Reflection,' where aliens make the final assault on your galaxy. As the Supreme Commander you must capture their Mother Ship. It's a strategically demanding game with a unique laser-shooting sèquence using reflectors. Tricky!

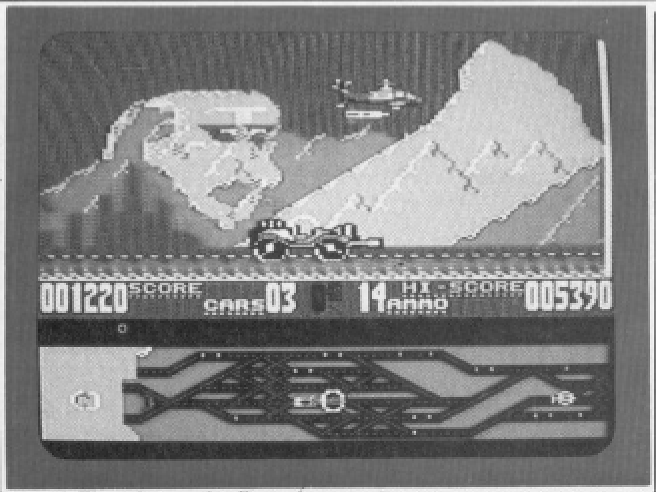
The unique design of all these games means they will make the very most of your Commodore 64's capabilities. They're available on either cassette or disk.

commodore
HARD SOFT TO BEAT

FOR MORE INFORMATION CONTACT: COMMODORE INFORMATION CENTRE, 1 HUNTERS ROAD, WELDON, CORBY, NORTHAMPTON NN7 1QX. TEL: CORBY (0536) 206252

OPEN ACCESS

Move up to warp 5 with MPS's high-speed disk loader, Spiderman drops in, Commodore ad gets banned, make backup copies of your favourite games with a datasette-to-datasette copier and look out for more computerised break dancing ... if it's happening to the 64, it's in Open Access



Black Thunder — the first of two by Tony Crowther to be distributed by Quicksilva

Third Time Lucky For Crowther's Trains?

Tony Crowther, author of Monty Mole and Potty Pigeon, seems to be making a career out of selling different versions of the same game to different software houses.

First come *Loco*, a game where you have to control a train racing along tracks while getting bombed by passing aircraft. Next was *Suicide Express*, a game where you have to control a train racing along tracks while getting bombed by passing aircraft. And finally Quicksilva proudly announces that it has bought the marketing rights to Crowther's *Black Thunder*, a game where you have to control a train racing along tracks while getting bombed by passing aircraft. Even the screen displays are all but identical. Come to think of it, *Potty Pigeon* is a game where you have to control a car racing along the road while getting bombed by passing pigeons. I think Mr Crowther has invented a new form of plagiarism.

I also think somebody should tell Quicksilva (on 0703-20169).

Commodore Cruel To Elephants?

Commodore's rather ridiculous tv ad, the one with a boxing elephant representing a 64, has been banned ... on the grounds of cruelty to elephants! The RSPCA made a complaint to the Advertising Standards Authority and the ASA asked Commodore to withdraw the ad.

Yes, 64k is worth shouting about if you're after machine code programmers, but what about the quality of the graphics? Or the fact that the 64 is one of the few home machines with a decent keyboard? Or the range of software available? And the poor old SID chip, easily the most sophisticated music chip in any home micro, doesn't even get a look in.

If the 64 can become the world's best-selling computer advertised by boxing elephants, it makes you wonder how well it would sell if Commodore bothered to point out what a good machine it is.



Speaking as someone who couldn't care less what Frankie says or where he goes, it's with a certain resignation that I pass on the news that Ocean Software has signed a deal with the pop band *Frankie Goes To Hollywood* to produce a 'Frankie' game. In an apparent attempt to win the 1985 Award for Meaningful-Sounding Gobbledygook, Ocean director David Ward says that he hopes the game will "bring together isolated industries as information technology changes the way data is accessed to the public." er, yeah. Me too. Ocean is on 061-832 6633.

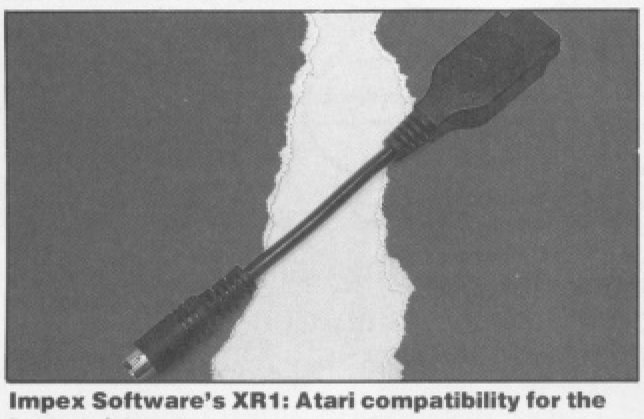


Adventure International has released the second in its Questprobe series of Scott Adams adventures, *Spiderman*. It's a text and graphics adventue with what AI describes as a full sentence interpreter. When I tried it, it didn't recognise "N", "GO N" or "NORTH" but insisted on the full "GO NORTH". Apparently 'full sentence interpreter' means it only interprets full sentences. It also didn't recognise "AGAIN" or "RETURN", though it did at least admit to being stupid for not doing so. Find out if Adventure International only understands full sentences on 021-359 0801. Spiderman costs £9.95 on tape only.

Armchair Break Dancing Hits Town

Armchair break dancers now have a choice of two games to break to. First we have CBS's *Break Dance* and now Interceptor's *Break Fever*. Interceptor's version provides you with musical backing in the form of an electro funk single on side B of the tape (played by a 64, naturally). I got confused when the instructions told me to "move the joystick left and right simultaneously." Ask Interceptor to explain the technique on 07356-71145.

LIZ HEANEY



Impex Software's XR1: Atari compatibility for the C-16 and Plus/4

Impex Plugs Into C-16 and Plus/4

As predicted in last month's *Y64*, a third-party company has produced a joystick adaptor allowing you to plug ordinary Atari-type joysticks (like those used on the 64) into the C-16 and Plus/4. Impex Software's XR1 Joystick Interface is the first that we've heard about. Each interface costs £2.45. Make your connection with Impex on 01-900 0999.

Y64 will shortly be presenting a DIY interface as a project.

SOFT STACK

Century Communications release a new mathematics package for the 64. The "Maths Tutor" pack provides an introduction to maths for the non-mathematical person. It includes a cassette and a book written in a very informal and refreshing style, and over 100 programs proving its ability to perform fast calculations. Consequently, it should appeal to people whose mathematical ability is rather rusty, and to students studying for exams. It could also be an aid to teachers wishing to demonstrate maths principles and techniques. The book alone costs £7.95. The software pack £11.95 (the cassette holds the most important programs). For further information contact: Penny Phipps or Miranda Pagewood, Book Promotions. Tel. 01-836 8635.

Practicorp Software release a new spreadsheet package for the 64. The Practicalc II is an integrated system, such that it is also a Database and Wordprocessor all in one. The Practicalc II has built-in context help screens, reads VISICALC, DIF, and TEXT files and has net present value and look-up functions. Practicalc II is available through Practicorp's dealers and retail outlets and costs £69.95. For further information, contact: Cathy Pittam.

Landsoft has introduced a version of its Payroll Plus program, for the 64. It is already used extensively on larger Commodore micros by accountants. Payroll Plus 64 complies with the Inland Revenue specifications, and as it operates with a Commodore 1541 single disk drive and compatible printer, provides an economical system. Details for up to 100 employees can be carried on a single disk. Security is achieved by using a password.

All the usual tax and National Insurance codes are covered. All staff details can be kept on the same file disk, and in any order. Various rates of overtime can be easily calculated and included, and several Pre-tax and after-tax adjustments are also available.

Printing can be carried out at four different stages, and both a comprehensive payslip and employer's copy are produced. Tax and National Insurance numbers can be easily updated, and individual or group totals easily calculated, at any time. The price is £85 + vat. The Update Service — £20 p.a. + vat. For further information contact: Ted Landsler, Tel: 01-878-7044/7.

Fieldmaster Software have reduced the prices of their business-utility programs.

These are: *Worksheet*, a spreadsheet program handling both figures and text now costing £19.95

Mail Label, a record database for recording names, addresses and other details, now costing £29.95.

Posterprint, produces enlarged letters and designs symbols and logos for leaflets and posters. Now costs £21.95.

Home Accounts, a program for the home or small businesses handling accounts and bank statements. Reduced price £19.95. All programs are on disk or cassette. For more details contact, Fieldmaster Software Co, 107 Oakwood Park Road, Southgate, London N14. Tel: 01 886 6709.

An educational program is released by Storm Software, for the 64. *Amazing Ollie* is for children aged 4-8 years old. It helps them learn about numbers, i.e. counting, addition, and co-ordination. Each program is supplied with a free Ollie Octopus button badge.

Amazing Ollie is available on cassette and costs £6.95. Further information may be got from: Storm Software, Tel: (0935) 813528.

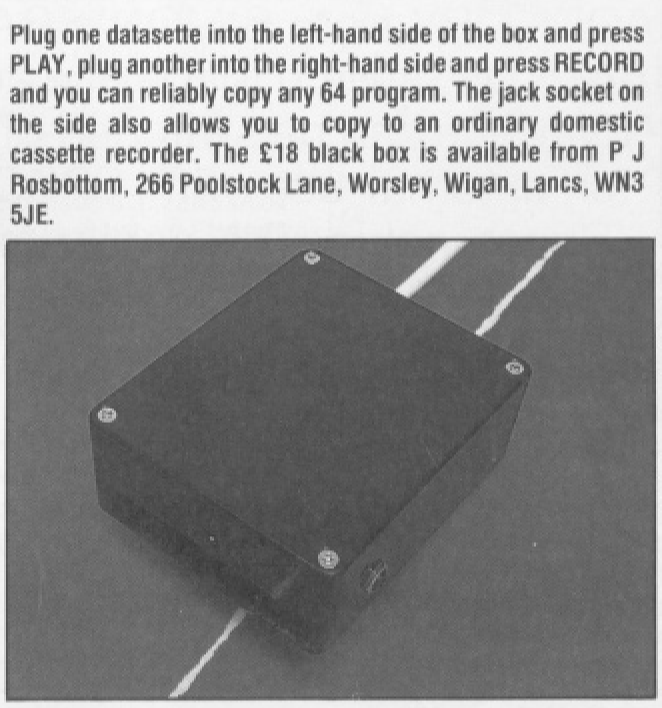
Hands up all of you out there who couldn't get Monit 64 to run? Well, we're sorry folks, but there was an error in last month's issue of Scratchpad, so for all of you who typed in the wrong listing, here's the correction.

Page 75; Line 4000 — should read: FORI = 0 to 56



In the picture it's a robot arm, but it can also be turned into a graphics board, a sorting machine, a *Towers of Hanoi*-solver, a plotter and a tracker to keep a solar cell pointing into the sun! The £65 *Fishertechnik Computing* package contains all the necessary components to build any of the six devices which are controlled by your 64. The 64 software is currently under development — get a release date on 01-804 1378.

Plug one datasette into the left-hand side of the box and press PLAY, plug another into the right-hand side and press RECORD and you can reliably copy any 64 program. The jack socket on the side also allows you to copy to an ordinary domestic cassette recorder. The £18 black box is available from P J Rosbottom, 266 Poolstock Lane, Worsley, Wigan, Lancs, WN3 5JE.



Take Her To Warp 5, Scotty...

MPS Software has announced a high-speed disk loader which, it claims, loads 1541 programs an average of five times faster! Warp 5 claims to load a 154-block program in 18 seconds (normally 102 seconds). Never one to take this sort of statement on trust, we'll be putting Warp 5 through the *Y64 Disk Benchmarks* and we'll let you know the results.

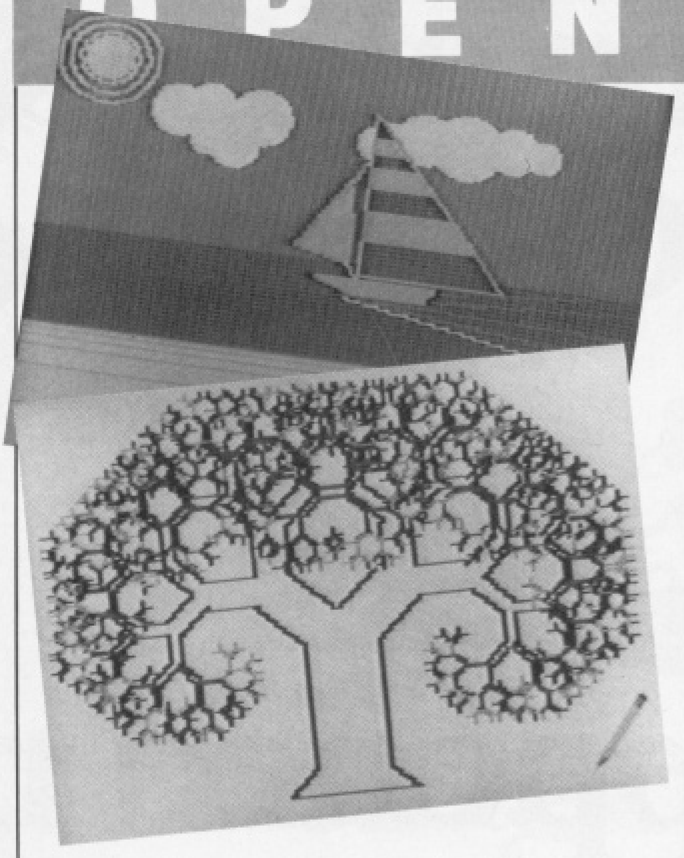
Warp 5 also adds a number of useful DOS commands including '@$' for a disk directory without overwriting the program in memory, '@NO:‹disk name›,‹id›' to format a disk and '↑‹filename›' to load and run a program.

Also included on the disk is a utility to turn machine code programs into automatic Warp-loading, auto-run files. This is a simple enough process with your own programs, but will not normally be possible with commercial software since you need to know the start address and may, in any case, run into problems with conflicting memory.

If you're thinking about Warping your own machine code programs, note that Warp 5 uses locations $0280-$02E2, $0330-$0331 (!), $CC00-$CF70 and $E000-$FFF. The autoboot utility requires these plus $CB00-$CC00. Rush out and call MPS on 01-800 3592

Morse Code Speeds Disk Loading

Watch out for disk software bearing the label *Diskspeed*. Morse Technology has licensed its high-speed disk loader to software houses for use on commercial disk software. Under Diskspeed, says Morse, almost all disk software will load in under 30 seconds.



Too late for inclusion in our roundup of graphic art packages, Activision has just released *Designer's Pencil.* The package is unusual in that it allows the user to create both pictures and sounds in a similar way to Logo, but using command menus. The package retails for £11.99. Activision is on 01-486 7588.

Melbourne Issues 40p Game Challenge

Melbourne House has released two £5.95 cassettes each containing 15 games from its *Commodore 16 Games Book,* each program working out at 40p. This, says Melbourne, is "a price that no-one can beat." The *Commodore 16 Games Packs I & II* are available from Melbourne on 01-940 6064.



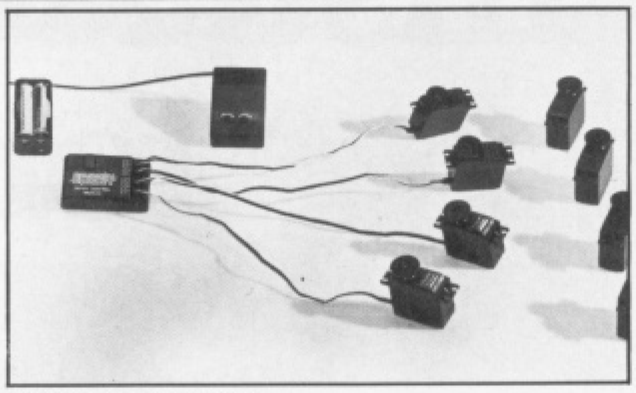
First it was US Gold. Then Statesoft. And now Ariolasoft has joined the growing queue of UK software houses producing US games under license. Ariolasoft has signed deals with Broderbund Software and Electronics Arts enabling it to bring you titles like *Lode Runner, Choplifter!, One-on-One* and *Realm of Impossibility* — all reached the top 5 in the US Billboard chart.

Eight of the first twelve programs are likely to retail at £9.95 on tape, £12.95 on disk; the other four at £11.95 tape, £14.95 disk. The tape versions will all fast-load. All twenty titles should be available by the time this issue is out. Ariolasoft is on 01-834 8507.

Beasty servo control module

Something to cheer the hearts of DIY robotics fans is this 8-channel remote-control servo controller available now from Commotion. The Infra-Red Beasty, which plugs into the 64's user port, can control up to eight servo motors within a six metre range, and is compatible with the Beasty Arm and Mobile Base. It costs £49.95.

Commotion is also distributing the EV1 electronic vision system and the Fisher Technik Robotics Kit. The EV1 can store and display hi-res (256x128) pictures, detect motion and recognise objects. It costs £129.95 including 64 software. The Fisher Technik kit is detailed elsewhere in Open Access. Commotion is on 01-804 1378!



The aptly-named Beasty.

Tandata Gets Smart With New Comms Software

Tandata Marketing has produced a new 300-baud comms package, Smart Modem.

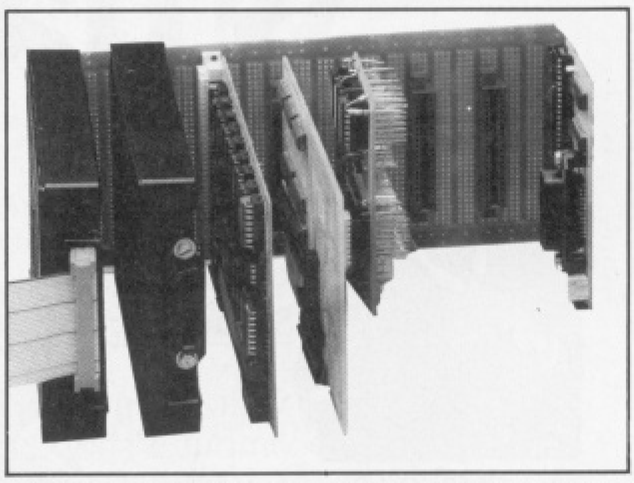
The package is available on disk only at £39.10. More info on 06845-68421, Prestel Mailbox 015465144 or Gold Mailbox 81:TAN010.

Osprey Compo

It may be early in the year, but the provisional winner of the *Y64 Most Boring Compo of 1985 Award* goes to Bourne Educational Software. The competition, based on Bourne's program *Osprey*, is to find "the best contributions based on the history of the Osprey and it's return to Scotland, set in the wider context of nature conservation and wildlife preservation." First prize is a crystal Osprey. Send your entries to Bourne, not to us.

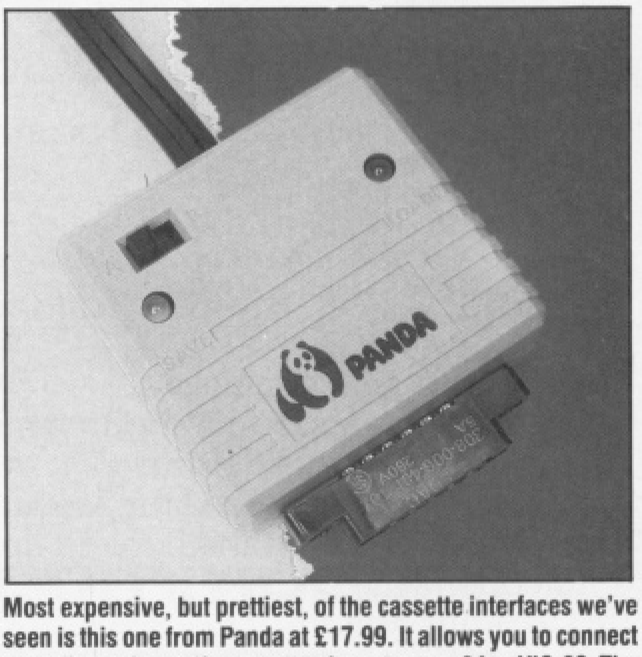
Horror Show

Y64 gives you fair warning that CRL is currently working on a computer version of *The Rocky Horror Show.* No details are available as yet, but it's due for release sometime this spring.



If you made the mistake of buying an inferior micro before buying your 64, don't throw away your cartridges, ROMs and peripherals. According to Wessex Microcomputers, all you need is this board, a plug-in 'personality module' for each micro and the emulation software. You'll then be able to use cartridge software and peripherals designed for other micros on your 64.

The hardware is already available, and the software should be ready within the next couple of months. No prices are available at the moment, but it'll probably be expensive. If your 64 needs a personality module, talk to Wessex on 0969-33509.



Most expensive, but prettiest, of the cassette interfaces we've seen is this one from Panda at £17.99. It allows you to connect an ordinary domestic cassette player to your 64 or VIC-20. The unit has two LEDs — the green one lights when you're loading, the red one when saving — and the switch is used to select different types of tape. Full marks to Panda for labelling the EAR and MIC jacks — other suppliers please note. Panda is on 0733-233600.

Instead of ten aliens, C
for his Commodo

What happened ne



__Saturday morning.__

Waltzed into my local computer shop.

Packed as usual with masses of kids enjoying the arcade games.

Surely I could put my Commodore 64 to better use. Helpful assistant suggests a Commodore Communications Modem.

Tells me it comes with a year's free subscription to Compunet, a new network service, saving me a cool thirty quid.

A bargain not to be missed, so I bought a Modem.

If I knew then, what I know now, I'd have thanked that assistant more.



__Saturday (one week later).__

Fantastic.

My Compunet membership came through this morning.

Hurriedly plugged the Modem into my 64's cartridge port, and hooked up to the telephone line.

Can't wait.

At last I can communicate with other Commodore 64 Modem owners and giant mainframes.

What's more, I can also access databases throughout Europe and the U.S.A.*

This is what home computing's all about.



__Sunday morning.__

Raining.

Tapped in my Compunet I.D. and personal password.

Wow, what a directory!

Decide to pit my wits against other Modem users by entering Multi User Dungeon, an interactive on-line game.

Should stretch the old grey matter a bit.

Then a quick look in 'The Jungle.' This is an open area where other Modem owners display messages.

See a Commodore user in Fife wants to sell 'U-boat' for £3.00.

Leave message offering him 'Mighty Gork' on a straight swap.



__Monday evening.__

Move on to the Compunet Software Park.

What a choice. Loads of high quality bargain programs.

Particularly interested in educational software, so I call up 'The Study.'

Download free physics package to help with my exams.

Clive bought a Modem
lore 64.



ext changed his life.



__Tuesday evening.__

Dad's turn.
I don't get a look in as he's busy teleshopping.

Actually it's amazing what bargains turn up. He even finds a new house.

Mum said she doesn't want to move and anyway his dinner's getting cold.



__Wednesday evening.__

Discover I can join BLAISE,* the computer service for the British Library.

Their catalogue of books dates way back to 1950.

Should give me an interesting edge over my school chums.

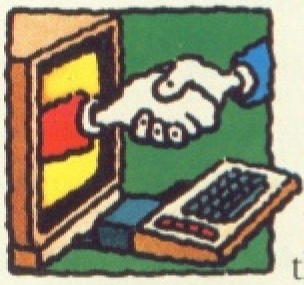


__Thursday evening.__

Sis has a go.
She keys into Prestel.*
Imagine, over 300,000 pages of information and news.

What does she choose? The lonely hearts section.

She's disappointed. Couldn't find Simon le Bon's private number.



__Friday evening.__

Yippee! Receive a reply from the guy in Fife.

He fancies taking on Gork.

What's more he's written a program he'd like my opinion on.

He transfers it direct, using the free user to user software.

I've made my first computer pal.

It has really been a week.

Best one I've had since getting my Commodore 64.

Sure am glad I got the Modem instead of all those aliens.

The Commodore 64 Communications Modem comes as a complete package with a year's free subscription to Compunet, for just £99.99 inc. VAT.

Find out how a Modem can change your life. See it now at Dixons, Curry's, Comet and selected Commodore dealers.

commodore

For further information phone or write to:
Commodore Communications Modem,
1 Hunters Road, Weldon, Corby,
Northamptonshire NN17 1QX, Tel: 0536 205252.

*Require additional subscriber charges. Prestel is a registered trademark of British Telecom.

BUSICALC 3

- the sophisticated spreadsheet !

Easy to learn, easy to use - something that can't be said of many business programs. But it's true of all the programs in the BUSICALC series.

BUSICALC 3 can handle all sorts of jobs - budgets, expenditure analysis, stock lists, price lists, and product costing are just a few of the possibilities. Three-dimensional formulae automatically access data stored on disk, so that you can easily pull together information from several different sheets and summarise or manipulate it.

It's simple to transfer data to other programs such as Easy Script. And you can use virtually any printer with BUSICALC 3, whether dot matrix or daisy wheel, Commodore or non-Commodore.

For the CBM 64 and PET/CBM 4000 & 8000 series.

Available through dealers or from:
Supersoft, Winchester House, Canning Road, Harrow HA3 7SJ

Phone 01-861 1166 for more details and a free catalogue.



MISSIVES

Y64 welcomes letters on all things 64: funnies, straights, anguished pleas for help. All published letters are now rewarded with a brand new game and book, and the author of the best letter also receives a one year subscription to the mag. Y64 Missives, 14 Rathbone Place, London W1P 1DE.

Jet Set Bug

Who does Software Projects think it is? Here I am a proud owner of a 64, laughing at little Spectrum owners because their programs are so bug-ridden, laughing mostly at the notorious Jet Set Willy and its attic bug. I tell my Spectrum-owning friends that 64 programs are faultless, but what happens? You've guessed it. Software Projects releases Jet Set Willy on my machine and I find to my sheer horror and disbelief that the 64 version is also impossible to finish. Not due to the attic this time, but the wine cellar. Yes, that's right, you can't get to all the objects. Someone should do something about these fiends, I've wasted my breath, but most of all, my hard-earned cash.

Steven Cranston,
London NW8

Alan Mathews also spotted this bug. We passed your letter on to Software Projects and received the following telex:

I was very surprised to hear of the problem Mr Cranston experienced with Jet Set Willy.

After reading the letter I loaded in the game and tried for myself. After numerous attempts, I failed to collect the items. We can only hold our hands in the air and apologise to Mr Cranston. We make every effort to ensure our products do not contain any bugs, but in a game the size of Jet Set Willy this is a monumental task and unfortunately the wine cellar was omitted.

It is ironic that it has taken over two months and many thousands of copies sold before this problem came to light.

Mr Cranston is wrong in one respect, however, in as much as it does not stop you playing the game and there is no prize or competition in connection with completing it.

The game has been bought and enjoyed by many and I hope this will not spoil their enjoyment too much.

Alan Maton,
Managing Director,
Software Projects

A Sprite Problem

In *Y64* issue 2, page 21, there's a listing for a Sprite Copier. I can't get this program to function correctly even though I have checked it very carefully. I have enclosed a printout of my program which checks out in each line, except line 1170, which I presume is incorrect in your magazine?

My program runs OK, but only produces hash sprites. Could you please advise if there is anything I can do with this?

Also, in issue 3, Joystick Jam (pp. 63-77) seems to have a block of lines missing (1180-1200) — is line 110 also correct?

Malcolm C. Morris,
Alum Rock, Birmingham

I have checked your listing against the original program which we have on disk. The program is, in fact, printed correctly in the magazine and line 1170 should read;

```
1170 PRINT "GOTO1300"
```

Before running the Sprite Copier, you must have some sprites (from your own programs or from commercial games) in memory ready to be copied. As a demonstration, load the Sprite Copier and type this in immediate mode:

```
FOR I=0 to 62: POKE 704+I,255:
NEXT: RUN
```

This line POKEs a complete sprite into area 11. When in the program, enter 11 and have it converted to data. If the program is working correctly, the data produced should be made up entirely of 255's.

Your other query was regarding the 'Multi Voice' program in issue 3. Our programs are printed directly from the original printer-listings after thorough testing. There is a block of line numbers missing (1180-1200), but this is not an error. Line 1170 starts with a REM statement. This method, used by many programmers when they are de-bugging programs, stops certain lines being executed. Often, these strange-looking lines are left in the program, but they do not affect the operation of the program in any way. Incidentally, as of this issue you'll notice that we've introduced a 'checksum' system to help readers locate typing errors.

Andrew Bennett,
Programs Editor

Come In Commodore

I have read with interest the letter in your magazine entitled 'Upgrade Plea' (*Missives, issue 4, page 22*).

I fully agree with that plea. I purchased the 64 in the 'heady' days when it cost £345.00. I still think it's a most excellent computer and wouldn't dream of changing it for one of the others merely because of its 'basic'(!) problem.

I do strongly feel, however, that since Basic 3.5 has now been made available for the Plus 4 and the Commodore 16, that Commodore should use today's advanced technology. An up-date chip for the 64 would ensure that its literally hundreds of thousands of loyal customers can benefit at last from a more useable programming language.

It's all very well having Simon's Basic and other 'cop-out' load-in software available, but this doesn't compare with an in-machine chip.

I am sure that most 64 owners have no intention of changing to the Plus 4 as the 64 is still a superior machine. So how about it, Commodore? There's a ready market of thousands just waiting for an up-grade chip, which if released at the right price level, say below £50, must surely be a guaranteed profit earner as I wouldn't imagine very many 64 owners *not* deciding to purchase one.

PW Nichols,
Henleaze, Bristol

We're still waiting for a comment from Commodore. Ed.

Disk Error Cure

I have discovered the following useful trick.

```
10 IF 1 THEN etc
```

The above line works after a disk error such as trying to save a program in program mode when there is already a program with the same name on the disk, e.g.

```
10 PRINT"HELLO"
SAVE "TRIAL",8
NEW
10 PRINT"THERE"
20 SAVE"TRIAL",8
30 IF 1 THEN GOTO 50
40 STOP
50 PRINT"IT WORKS"
```

WH Lovelock,
Bangor, Gwynedd

It does indeed — clever stuff. Any readers got any similar tricks?

A Hexing Problem

I was recommended Assembler 69 by Interceptor Micros by a shop manager as a cheap but good assembler. It was cheap, but for someone who is just beginning to learn machine code, it is anything but good. While it does do its job, it puts you in the position of entering all values in decimal format. Since all the machine code routines I have seen printed used hex, if one does as recommended and learns by example you have to translate every hex to value. This procedure is helped by the inclusion of a hex to decimal convertor but is still a possible source of error which makes life more difficult. Perhaps a review is called for to warn the unwary.

John Coltish, Harrow

Over to you, Interceptor. Anyone else come across this sort of problem in other products? Ed.

Hey Prestel

I have been buying Y64 since the first issue. The reason I buy it is because it covers a large area of subjects and is interesting to read.

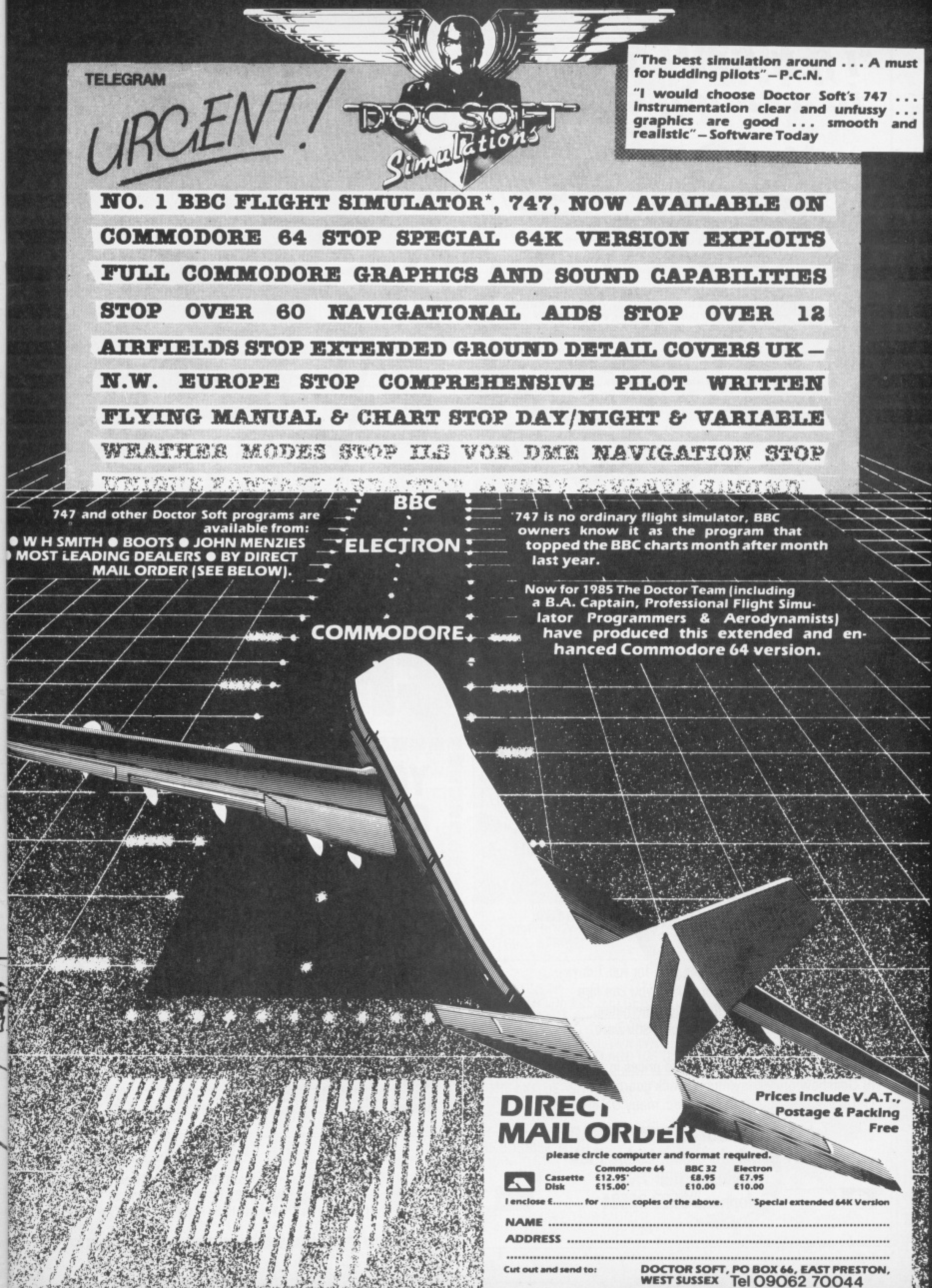
First things first: after reading *Missives* in issue 4, I'm in a total support of upgrading the 64. The Sinclair Spectrum has an enormous amount of upgrades in both hardware and software so why not the 64?

Secondly, I bought a modem recently for my 64. At the moment I can only access bulletin boards with the software the manufacturers provided. I have told them that I would like to have access to Prestel and Micronet and others, but they told me I needed software to communicate with them. Unfortunately they do not stock suitable software.

I am writing to you to ask if you could give me any information about communication with Prestel, Micronet, etc.

Peter King,
London SW2

To access viewdata systems like Prestel, you'll normally need a modem capable of operating at 1200/75-baud. If you have this, you can obtain suitable software from Chris Townsend Computers on 0484-516266. If your modem can only operate at 300-baud, you can still get into Prestel and Micronet on 01-248 5747 but this is expensive for those outside London. For a demonstration, enter 4444444444 as the user ID and 4444 as the password. Ed.


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YOUR OWN

International Football still rules the chart this month but with Ghost Busters new at 10, we could have a new no.1 next issue. There's quite a lot of sport in this month's top 20, don't you lot ever get tired.

Great to see so many new entries this month, even if half of them were in the chart before. Eureka! looks like it's onto a winner with its reward (but how do you win, I've been at it for days?- Ed). Also nice to see Mothership back again after her hasty exit last time.

Winner of this Month's surprise software pack, is Luke Hindmarsh of Kingsbury, London. Congratulations Luke on being first out of the hat. Keep sending in your coupons and you could be our next issue's winner. Remember to jot down a few lines as to why you think your choices are so good and try to make them as funny as possible, the best ones we'll print in the mag. So get your thinking caps on and start writing.

CHOICE CHARTS

YOUR 64 CHOICE TWENTY

My top five games for the **Commodore 64** are:

1 ____________________

2 ____________________

3 ____________________

4 ____________________

5 ____________________

Name____________________

Address____________________

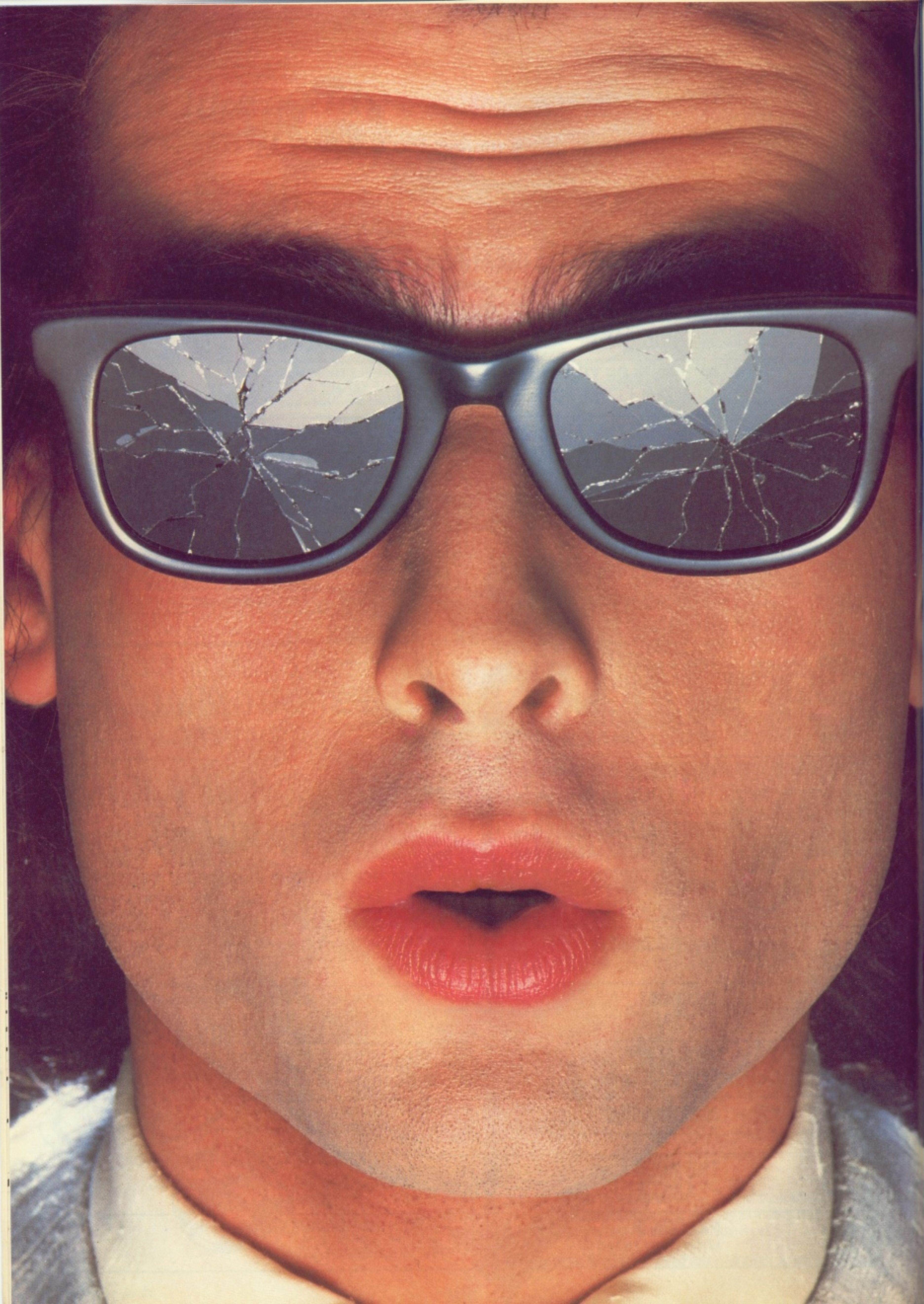
____

____

All polling slips should be mailed to: **Your 64 Choice Twenty, 14 Rathbone Place, London W1P 1DE.** (By all means send a photocopy if you'd prefer not to harm the issue.)

YOUR 64'S TOP TWENTY

THIS MONTH	LAST MONTH	TITLE	COMMENT
1	1	**INTERNATIONAL FOOTBALL** COMMODORE	WILL IT EVER BE KICKED OFF THE TOP OF THE LEAGUE OR IS IT UNBEATABLE?
2	3	**BEACH HEAD** ACCESS	BOUYS 'O BOUYS, SEEMS LIKE THIS WAR WILL NEVER COME TO A HEAD!
3	4	**DALEY THOMPSON'S DECATHLON** OCEAN	OH WELL, BRONZE IS BETTER THAN NOTHING EH, DALEY?
4	6	**DECATHLON** ACTIVISION	JUST OUTSIDE A MEDAL PLACING — CAN THEY OUST DALEY OUT NEXT TIME?
5	15	**REVENGE OF THE MUTANT CAMELS** LLAMASOFT	THE CAMELS FROM MUTANIA MOVE UP YET AGAIN, SURELY THEY MUST BE CONFUSED BY NOW!
6	5	**TALES OF THE ARABIAN KNIGHTS** INTERCEPTOR	THIS GAME ENDS WHEN THE (K)NIGHT IS GONE.
7	11	**JET SET WILLY** SOFTWARE PRODUCTS	WILLY'S JETTING BACK UP THE CHART, BUT WHOSE IDEA WAS ANTI-PIRACY TIRADE?
8	2	**THE HOBBIT** MELBOURNE HOUSE	TOLKIEN IS PROBABLY TURNING IN HIS GRAVE, AS BILBO'S STAMINA CRASHES.
9	7	**HUNCHBACK** OCEAN	ESMERALD COULD EASILY TAKE THE HUMP, IF QUASIMODO CONTINUES LIKE THIS.
10	NEW	**GHOST BUSTERS** ACTIVISION	GHOST BUSTIN' NEVER FELT SO GOOD. I AIN'T AFRAID OF NO GHOS...AHHH!
11	RE-ENTRY	**FALCON PATROL** VIRGIN GAMES	MAKING A SWOOP BACK INTO THE CHART!
12	14	**QUOVADIS** THE EDGE	THE GAME THAT TAKES YOU TO THE EDGE OF MEDIEVAL COMBAT.
13	12	**FOOTBALL MANAGER** ADDICTIVE GAMES	LOOKS LIKE THIS ONE COULD GET RELEGATED QUITE SOON, IF IT KEEPS THIS DOWN (SORRY-UP!)
14	9	**FORBIDDEN FOREST** AUDIOGENIC	IT'S JUST ABOUT DUE FOR(A)EST — GROAN, GROAN!
15	8	**MANIC MINER** SOFTWARE PRODUCTS	WE CAN'T STAND FOR THIS, EVERYBODY OUT! STRIKE STRIKE!
16	NEW	**EUREKA!** DOMARK	STRAIGHT IN AT 16. WOULDN'T HAVE ANYTHING TO DO WITH THE £25,000 REWARD, WOULD IT?
17	RE-ENTRY	**HOVER BOVER** LLAMASOFT	BOVER WITH A HOVER AS YOU CUT YOUR LAWN WHILE FENDING OFF JIM AND HIS DOG
18	RE-ENTRY	**MOTHERSHIP** ARCTIC	RETURN OF THE MOTHERSHIP, THE MOTHERSHIP STRIKES BACK. WELL, IT IS A STAR WARS TYPE GAME!
19	RE-ENTRY	**THE BOSS** PEAKSOFT	NEEDS TO BE BOSSIER TO GET MORE THAN JUST A PEAK-IN HERE ...
20	NEW	**FALCON 2** VIRGIN GAMES	BOTH GAMES ON THE (PR)OWL THIS MONTH. (NOT ANOTHER ONE GROAN!)



See Micronet 800 in action.

AVON

Bath. Boots, 1 Marchants Passage, Southgate. Tel: 0225 64402.
Bristol. Avon Computer Rentals, 16 West Street, Old Market. Tel: 0272 550600.
Bristol. Boots, 59 Broadmead. Tel: 0272 293631.
Bristol. Laskys, 16-20 Penn Street. Tel: 0272 20421.
Keynsham. Key Computer Systems 42b High Street. Tel: 02756 5575.
Weston-super-Mare. K & K Computers, 32 Alfred Street. Tel: 0934 419324.

BEDFORDSHIRE

Bedford. Boots, The Harpur Centre, Harpur Street. Tel: 0234 56231.
Dunstable. Dormans, 7-11 Broad Walk. Tel: 0582 38302.
Leighton Buzzard. Datasine, 59 North Street. Tel: 0525 374200.
Leighton Buzzard. Milton Keynes Music & Computers, 17 Bridge Street. Tel: 0525 382504.
Luton. Hobbyte, Unit 16, The Arndale Centre. Tel: 0582 457195.
Luton. Laskys, 190-192 Arndale Centre. Tel: 0582 38302.
Luton. Terry More, 49 George Street. Tel: 0582 23391.

BERKSHIRE

Reading. Laskys, 118-119 Priar St. Tel: 0734 595459.
Slough. Data Supplies, Templewood Lane, Farnham Common. Tel: 2 820004.
Slough. Laskys, 75 Queensmere Centre. Tel: 0753 78269.
Slough. MV Games, 245 High Street. Tel: 75 21594.

BUCKINGHAMSHIRE

Bletchley. RAMS Computer Centre, 117 Queensway. Tel: 0908 647744.
Chesham. Reed Photo & Computers, 113 High Street. Tel: 0494 783373.

CAMBRIDGESHIRE

Cambridge. Boots, 65-67 Sidney Street and 28 Petty Curry Street. Tel: 0223 350213
Cambridge. Cambridge Computer Store, 4 Emmanuel Street. Tel: 0223 358264
Cambridge. Heffers Stationers. 19 Sidney Street. Tel: 0223 358241.
Peterborough. Boots, 40-42 Bridge Street, Queensgate. Tel: 0733 65352.

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Chester. Boots, 47-55 Foregate Street. Tel: 0244 28421
Chester. Computer Link, 21 St. Werburgh Street. Tel: 0244 316516.
Chester. Laskys, 7 The Forum, Northgate Street. Tel: 0244 317667.
Crewe. Midshires Computer Centre, 68-78 Nantwich Road. Tel: 0270 211086
Ellesmere Port. RFR TV & Audio, 1 Pooltown Road, Whitby. Tel: 051-356 4150.
Hyde. C Tech Computers, 184 Market Street. Tel: 061-366 8223.
Macclesfield. Camera Computer Centre, 118 Mill Street. 0625 27468
Macclesfield. Computer Centre, 68 Chestergate. Tel: 0625 618827.
Marple. Marple Computer Centre, 30-32 Market Street. Tel: 061-427 4328
Stockport. National Micro Centres, 36 St Petersgate. Tel: 061-429 8080
Stockport. Stockport Micro Centre, 4-6 Brown Street. Tel: 061-477 0248.
Widnes. Computer City, 78 Victoria Road. Tel: 051-420 3333.
Wilmslow. Wilmslow Micro Centre. 62 Grove Street. Tel: 0625 530890.

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Middlesbrough. Boots, 88-90 Linthorpe Road, The Cleveland Centre. Tel: 0642 249616.

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Kendal. The Kendal Computer Centre, Stramongate. Tel: 0539 22559.
Penrith. Penrith Communications, 14 Castlegate. Tel: 0768 67146.
Whitehaven. P D Hendren, 15 King Street. Tel: 0946 2063.
Workington. Technology Store, 12 Finkle Street. Tel: 0900 66972.

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Alfreton. Gordon Harwood, 67-71 High Street. Tel: 0733 836781.
Chesterfield. Boots, 35-37 Low Pavement, Market Place. Tel: 0246 203591.
Chesterfield. Computer Stores, 14 Stephenson Place. Tel: 0246 208802.
Derby. Boots, 1 Devonshire Walk. Tel: 0322 45886.

DEVON

Exeter. Boots, 251 High Street, Tel: 0392 32244.
Exeter. Open Channel, Central Station, Queen Street. Tel: 0392 218187.
Paignton. Computer Systems Ltd, 35 Hyde Road. Tel: 0803 524284.
Plymouth. Syntax, 76 Cornwall Street. Tel: 0752 28705.
Seaton. Curtis Computer Services, Seaton Computer Shop, 51c Harbour Road. Tel: 0297 22347.
Tiverton. Actron Microcomputers, 37 Bampton Street. Tel: 0884 252854.

DORSET

Bournemouth. Brook Computers, 370 Charminster Road. Tel: 0202 533054.
Bournemouth. Lansdowne Computer Centre, 1 Lansdowne Crescent, Lansdowne. Tel: 0202 20165.
Dorchester. The Paper Shop, Kings Road. Tel: 0305 64564.
Poole. Lansdowne Computer Centre, 14 Arndale Centre. Tel: 0202 670901.

ESSEX

Basildon. Basildon Software Centre, 78-80 Liberty Shopping Hall, East Square. Tel: 0268 27922.
Chelmsford. Maxton Hayman, 5 Broomfield Road. Tel: 0245 354595
Chelmsford. Way In Computers, 7 Village Square, Chelmer Village. Tel: 0245 467858.
Colchester. Boots, 5-6 Lion Walk. Tel: 0206 577303.
Grays. H. Reynolds, 28a Southend Road. Tel: 0375 31641.
Harlow. Harlow Computer Centre, 17 Staple Tye. Tel: 0279 22846.
Harlow. Laskys, 19 The Harvey Centre. Tel: 0279 443495.
Hornchurch. Comptel Computer Systems, 112a North Street. Tel: 0402 446741.
Ilford. Boots, 177-185 High Road. Tel: 01-553 2116.
Romford. Software Plus, 72 North Street. Tel: 70 65271.
Southend-on-Sea. Computerama, 88 London Road. Tel: 0702 335443.
Southend-on-Sea. Computer Centre, 336 London Road. Tel: 0702 337161.
Southend-on-Sea. Estuary Personal Computers, 318 Chartwell North, Victoria Circus Shopping Centre. Tel: 0702 614131.

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Cheltenham. Screen Scene, 144 St. Georges Road. Tel: 0242 528979.
Gloucester. Boots, 38-46 Eastgate Street. Tel: 0452 423501.

HAMPSHIRE

Basingstoke. Fishers, 2-3 Market Place. Tel: 0256 22079.
Southampton. Business Electronics, Micromagic At Atkins, 7 Civic Centre Road. Tel: 0703 25903.
Waterlooville. GB Microland, 7 Queens Parade, London Road. Tel: 0705 259911.

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Watford. SRS Microsystems, 94 The Parade, High Street. Tel: 0923 26602.
Watford. Watford Electronics, Cardiff Road. Tel: 0923 405588.
Welwyn Garden City. DJ Computers, 40 Fretherne Road. Tel: 96 28444.

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Beverley. Computing World, 10 Swabys Yard, Dyer Lane. Tel: 0482 881831.

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Bromley. Computers Today. 31 Market Square. Tel: 01-290 5652.
Bromley. Laskys, 22 Market Square. Tel: 01-464 7829.
Bromley. Walters Computers, Army & Navy, 64 High Street. Tel: 01-460 9991.
Chatham. Boots, 30-34 Wilmott Square, Pentagon Centre. Tel: 0634 405471.
Gravesend. Gravesend Home Computers, 39 The Terrace. Tel: 0474 23871.
Gillingham. Regal Software Supplies, 49 High Street. Tel: 0634 579634.
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Rainham. Microway Computers, 39 High Street. Tel: 0634 376702.
Sevenoaks. Ernest Fielder Computers, Dorset Street. Tel: 0732 456800.
Shortlands. The Village House of Computers, 87 Beckenham Lane. Tel: 01-460 7122.
Sittingbourne. Computer Plus, 65 High Street. Tel: 0795 25677.
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Preston. 4Mat Computing, 67 Friargate. tel: 0772 561952.
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W1. Computers of Wigmore Street, 104 Wigmore Street. Tel: 01486 0373.
W1. HMV, 363 Oxford Street. Tel: 01-629 1240.
W1. Laskys, 42 Tottenham Court Road. Tel: 01-636 0845.
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W1. Sonic Foto Micro Center, 256 Tottenham Court Road. Tel: 01-580 5826.
W1. Tomorrows World Today, 27 Oxford Street. Tel: 01-439 7799.
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WC1. Transam Micro Systems, 59-61 Theobalds Road. Tel: 01-405 5240.
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EC2. Devron Computer centre, 155 Moorgate. tel: 01-638 3339.
N14. Logic Sales, 19 The Bourne, The Broadway, Southgate. Tel: 01-882 4942.
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NW3. Maycraft Micros, 58 Rosslyn Hill, Hampstead. Tel: 01-431 1300.
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Manchester. Laskys, 12-14 St. Marys Gate. Tel: 061-833 0268.
Manchester. Mighty Micro, Sherwood Centre, 268 Wilmslow Road, Fallowfield. Tel: 061-224 8117.
Manchester. NSC Computer Shops, 29 Hanging Ditch. Tel: 061-832 2269.
Manchester. Walters Computers, Kendal Milne, Deansgate. Tel: 061-832 3414.
Oldham. Home & Business Computers, 54 Yorkshire Street. Tel: 061-633 1608.
Swinton. Mr Micro, 69 Partington Lane. Tel: 061-728 2282.

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Heswall. Thornguard Computer Systems, 46 Pensby Road. Tel: 051-342 7516.
Liverpool. Hargreaves, 31-37 Warbreck Moor, Walton. Tel: 051-525 1782.
Liverpool. Laskys, Dale Street. Tel: 051-236 3298.
Liverpool. Laskys, St. Johns Precinct. Tel: 051-708 5871.
St. Helens. Microman Computers, Rainford Industrial Estate, Mill Lane Rainford. Tel: 0744 885242.
Southport. Central Studios, 38 Eastbank Street. Tel: 0704 31881.

MIDDLESEX

Enfield. Laskys, 44-48 Palace Garden Shopping Centre. Tel: 01-363 6627.
Harrow. Camera Arts, 42 St. Anns Road. Tel: 01-427 5469.
Harrow. Harrow Micro, 24 Springfield Road. Tel: 01-427 0098.
Hounslow. Boots, 193-199 High Street. Tel: 01-570 0156.
Southall. Twillstar Computers Ltd, 7 Regina Road. Tel: 01-574 5271.
Teddington. Andrews, Broad Street. Tel: 01-997 4716.
Twickenham. Twickenham Computer Centre, 72 Heath Road. Tel: 01-892 7896.
Uxbridge. JKL Computers, 7 Windsor Street. Tel: 0895 51815.

NORFOLK

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Sutton in Ashfield. HN & L Fisher, 87 Outram Street. Tel: 0623 54734.
Nottingham. Laskys, 1-4 Smithy Row. Tel: 0602 413049.

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Abingdon. Ivor Fields Computers, 21 Stern Street. tel: 0235 21207.
Banbury. Computer Plus, 2 Church lane. Tel: 0295 55890.
Oxford. Absolute Sound & Video, 19 Old High Street, Headington. Tel: 0865 65661.
Oxford. Science Studio, 7 Little Clarendon Street. Tel: 0865 54022.

SCOTLAND

Aberdeen. Boots, 133-141 Union Street. Tel: 0224 585349.
Edinburgh. Boots, 101-103 Princes Street. Tel: 031-225 8331.
Edinburgh. Laskys, 4 St. James Centre. Tel: 031-556 1864.
Glasgow. Boots, 200 Sauchiehall Street. Tel: 041-332 1925.
Glasgow. Boots, Union Street and Argyle Street. Tel: 041-248 7387.
Glasgow. Tom Dixon Cameras, 15-17 Queen Street. Tel: 041-204 0826.

SHROPSHIRE

Shrewsbury. Clairmont Enterprises, Hills Lane. Tel: 3647 52949.
Shrewsbury. Computerama, 13 Castlegate. Tel: 0743 60528.
Telford. Computer Village Ltd, 2/3 Hazeldine House, Central Square. Tel: 0952 506771.
Telford. Telford Electronics, 38 Mall 4. Tel: 0952 504911.

STAFFORDSHIRE

Newcastle-under-Lyme. Computer Cabin, 24 The Parade, Silverdale. Tel: 0782 636911.
Stafford. Computerama, 59 Foregate Street. Tel: 0785 41899.
Stoke-on-Trent. Computerama, 11 Market Square Arcade, Hanley. Tel: 0782 268524.

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Bury St. Edmunds. Boots, 11-13 Cornhill. Tel: 0284 701516.
Bury St. Edmunds. The Computer Centre, 1-3 Garland Street. Tel: 0284 705503.
Ipswich. Brainwave Micros, 24 Crown Street. Tel: 047 350965.

SURREY

Bagshot. P & H Electronics, 22-24 Guildford Road. Tel: 0276 73078.
Croydon. Laskys, 77-81 North End. Tel: 01-681 8443.
Croydon. The Vision Store, 53-59 High Street. Tel: 01-686 6362.
Croydon. The Vision Store, 96-98 North End. Tel: 01-681 7539.
South Croydon. Concise Computer Consultants, 1 Carlton Road. Tel: 01-681 6842.
Epsom. The Micro Workshop, 12 Station Approach. Tel: 0372 721533.
Guildford. Walters Computers, Army & Navy, 105-111 High Street. Tel: 0483 68171.
Wallington. Surrey Micro Systems, 53 Woodcote Road. Tel: 01-647 5636.
Woking. Harpers, 71-73 Commercial Way. Tel: 0486 225657.

SUSSEX

Bexhill-on-Sea. Computerware, 22 St. Leonards Road. Tel: 0424 223340.
Brighton. Boots, 129 North Street. Tel: 0273 27088.
Brighton. Gamer, 71 East Street. Tel: 0273 728681.
Brighton. Laskys, 151-152 Western Road. Tel: 0273 725625.
Crawley. Gatwick Computers, 62 The Boulevard. Tel: 0293 37842.
Crawley. Laskys, 6-8 Queensway. Tel: 0293 544622.
Eastbourne. Boots, 15 Eastbourne Arndale Centre. Tel:

TYNE & WEAR

Gateshead. DP Supplies, St. Andrews House, Westfield Terrace. Tel: 0632 785068.
Newcastle-upon-Tyne. Boots, Eldon Square. Tel: 0632 329844.
Newcastle-upon-Tyne. Laskys, 6 Northumberland Street. Tel: 0632 617224.
Newcastle-upon-Tyne. RE Computing, 12 Jesmond Road. Tel: 0632 815580.

WALES

Aberdare. Inkey Computer Services, 70 Mill Street, The Square, Trecynon. Tel: 0685 881828.
Aberystwyth. Aberdata at Galloways, 23 Pier Street. Tel: 0970 615522.
Cardiff. Boots, 26 Queens Street & 105 Frederick Street. Tel: 0222 31291.
Cardiff. P & P Computers. 41 The Hayes. Tel: 0222 26666.
Swansea. Boots, 17 St. Marys Arcade, The Quadrant Shopping Centre. Tel: 0792 43461.

WARWICKSHIRE

Coventry. Coventry Micro Centre, 33 Far Gosford Street. Tel: 0203 58942.
Coventry. Impulse Computer World, 60 Hertford Street Precinct. Tel: 0203 553701.
Coventry. JBC Micro Services, 200 Earlsdon Avenue, North Earlsdon. Tel: 0203 73813.
Coventry. Laskys, Lower Precinct. Tel: 0203 27712.
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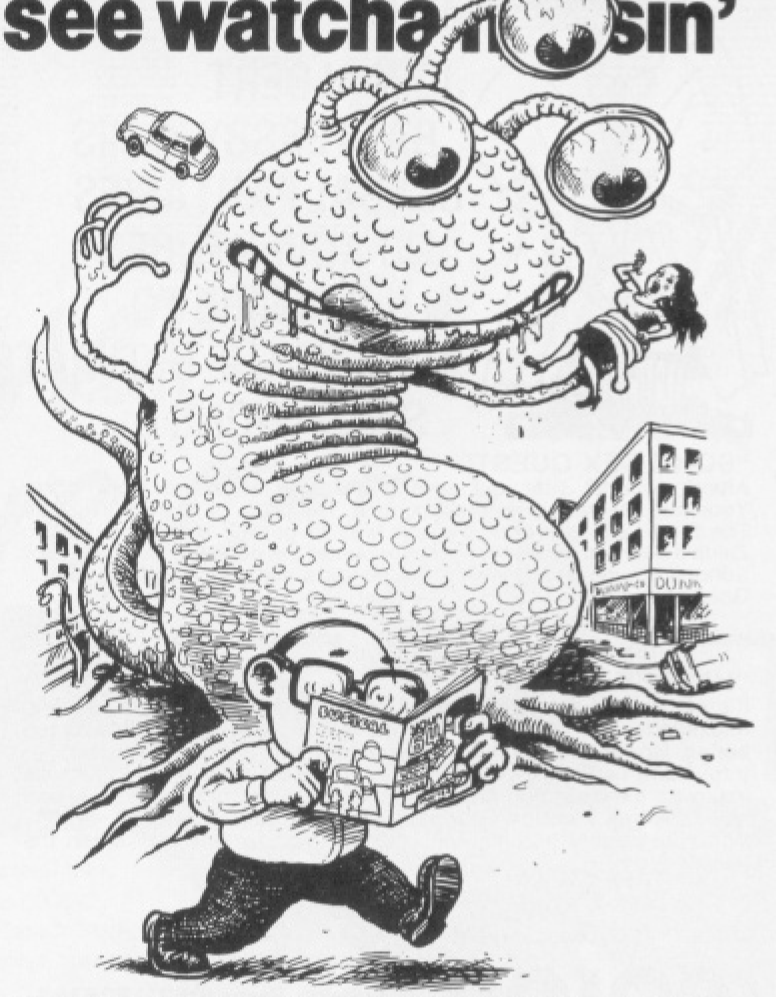
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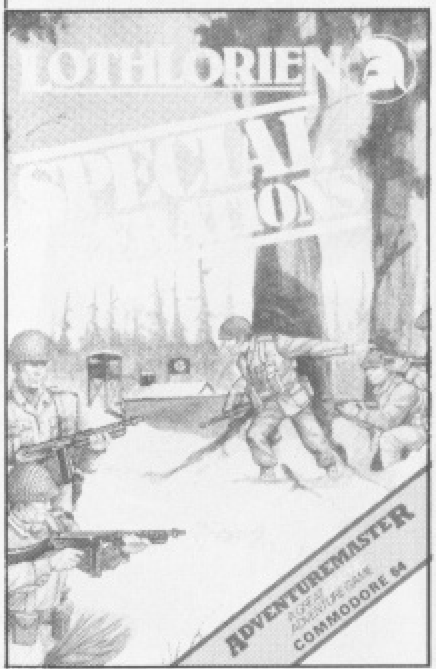
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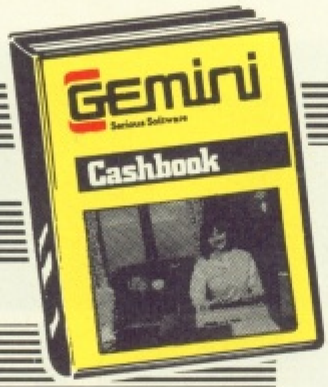
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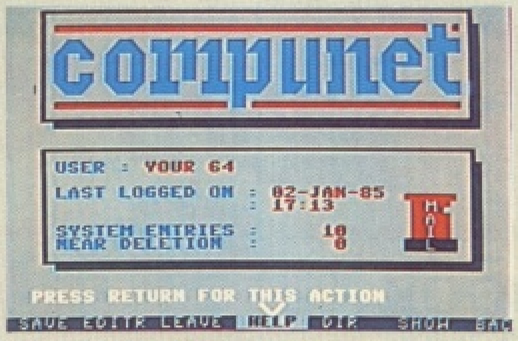
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BATTLE OF THE NETW

COMPUNET

Compunet is, for the first six months, the exclusive domain of 64 users. Although other machines will be able to access the system shortly, there's every chance that it will remain dominated by the 64.

The sign-on screen



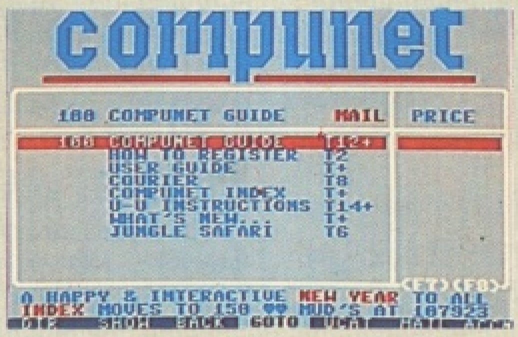
Connecting up the hardware couldn't be easier. The modem is plugged into the cartridge port and the telephone socket. On power-up, you get a copyright message and you're in business. With slight trepidation, you type CONNECT followed by the telephone number. After what seems an age, you're connected and asked to provide your password. After a further wait the above screen appears. There's still a delay while some software is downloaded, but this can be saved to speed up connection in the future. You'll note the black row of words along the bottom of the screen: this is the "duck-shoot" and is effectively a horizontally scrolling menu. The duck-shoot provides all the commands necessary to get you about the system. I'll indicate duck-shoot commands by enclosing them in square brackets. For example]DIR[.

Page 1: The top-level menu.



Enter]DIR[at the title screen and you get the welcome screen — a directory with the titles in red and sub entries in blue. The right hand column tells you who wrote it, the cost and the life-time of the entry (how long it will remain on the system before being automatically deleted). You step through the entries by using the cursor up/down key. The "T" following the entry name indicates the number of pages in the entry. You can access these pages with]SHOW[. Each entry is actually the heading to a sub-directory which can be accessed by]GOTO[. As you move the cursor to an entry, you will see the frame number of the entry on the right. (The Welcome frame is number 1) You can jump to any frame with]GOTO[followed by the frame number.

Page 100: How to use Compunet.



Place the cursor over ABOUT COMPUNET on screen 1, enter]DIR[and you're whisked to frame 100, which offers a range of general information from how to use the system to a competition. COURIER explains how the electronic mail system works. In essence, electronic mail simply involves sending a message to someone via the Compunet computer. When the recipient logs on next, he sees a postbox icon on his sign-on screen which tells him that he has mail to collect. He then uses]MAIL[to read it. WHAT'S NEW tells you about new facilities; and the other entries of obvious value to most users are JUNGLE SAFARI and SOFTWARE INDEX.

Page 600: The jungle, where anything goes!



The JUNGLE is an interesting place. No, it's not full of animals, it's simply a place where anything goes. It's the one area where users have unlimited access to place adverts, put programs or screens on the noticeboard and generally have fun (provided it's not obscene or criminal!). The contents of the directory are self explanatory and show the wide range of information displayed in the JUNGLE, such as a free program uploaded by Jeff Minter (of Llama fame) for subscribers' use.

Imagine being able to pick up the phone, dial a local number, press a few keys on your 64 and be able to buy the latest Minter classic. And imagine that, instead of arriving through the post several days later, the program is instantly downloaded into your 64 ready for use.

Or how about being able to create a message — or even a picture — on your 64 in full colour and transmit it instantly to your friends. Or swap software with other users, instantly, over the phone. Or play multi-player games, competing not only against a computer but against other 64 users too.

Well, become a member of either Micronet or Compunet and you don't have to imagine any of these possibilities — you'll be doing them! And a whole host of other useful things besides. So what are these wonderful creations?

Compunet and Micronet are both dial-up computer systems (also known as databases) running on mainframe (large multi-user) computers. You need a telephone line, a 64 and a modem — the £100 box that allows you to connect your computer to the telephone line. (A full technical explanation of modems and computers communicating by phone was given in *Comms Link, issue 2, pp. 49-50*). Armed with this, you're only a phone call away from either system.

Both systems offer a very similar range of services, and cost about the same, but there are significant differences between the two. To help you get an idea of what each is like in practice, we've tried similar sorts of things with both systems and you can see the results below.

The review is in two parts. The annotated review was carried out by someone with no previous experience of computer communications. Since most users will probably come into this category, ease of use is obviously a very important factor.

The overview was written by someone with experience of both systems.

MICRONET

Micronet is part of Prestel — British Telecom's viewdata service. It's full name is Micronet 800, so-called because it starts on page 800 of Prestel.

Although Prestel was originally aimed at home computer users, it found that most of its customers are businesses needing instant, up-to-the-minute information on things like share prices, timetables, company activities, news and so on. Since one of the purposes of Prestel was to encourage use of the phone system during off-peak hours, Prestel began looking for some way of encouraging hobbyists to use the system. The answer came in the form of Micronet.

Run by an independent company, Mic-

TWORKS!

Being able to use your 64 to dial up a mainframe computer system aimed at computer hobbyists is an exciting prospect, but how do you choose between the two systems available? Allen Webb *tried both from the viewpoint of a newcomer, while* Surya *adds a few comments as a regular user of both.*

ronet is aimed exclusively at hobbyists. Its main feature is free public domain software for direct downloading, though it also offers hints and tips, commercial software, electronic mail (of sorts), a bulletin board and so on. It also allows users to access the main Prestel database.

Until last year, Micronet wasn't officially available to 64 users. There was no 64 modem to allow you to connect, and no 64 software available even if you got onto the system. The 64 database was officially opened in August of last year.

Communication with Micronet is not error-trapped, so it's possible to receive corrupted and, occasionally, totally unreadable text due to noise on the phone line, but the amount of corruption is normally acceptable.

Speed of response is generally good — if you know where you're going. It can take a long time to reach somewhere if you don't. There are still some wrongly addressed pages — that is, pages which don't lead anywhere — but this isn't fatal since this just puts you back to the last page you called.

The graphics quickly grow very tedious. You sometimes have to work your way through several pagefuls of pretty block graphics to reach the bit you want. The short index is quite useful, and most of the main sub-indexes have reasonably short page numbers that are easy to remember.

The quality of the free software is generally worse than the worst magazine listings. There were one or two programs that I don't think even Yore Kommodore would have published! Still, the worst ones take only a minute or so to download so at least you won't have wasted much time.

The electronic mail is a bad joke. You've got no editing facilities, and, to send a letter to someone, you have to know their ten-digit mailbox number. Personally I'm not very good at remembering large numbers of ten-digit codes and don't see why Micronet should expect me to be. Watching a letter being uploaded at 75-baud (about 12 words per second) is also painfully slow, but not nearly so bad as Compunet.

Prestel itself is pretty boring. You can read news summaries, check out the weather and look up timetables, but personally I've never found it worth the effort. You can also order goods by credit card, but again you'll probably find a phone call less trouble. My guess is that you'll take a look around at first, maybe order a few things for the novelty and then stick to the Micronet area.

COMPUNET

Compunet is widely believed to be owned and run by Commodore, and neither Commodore nor Compunet appears to have done much to dispel this belief.

MICRONET

Micronet is the section of Prestel devoted to home computer users, and Prestel membership is included in the Micronet subscription. The 64 area is just one of several databases aimed at users of specific machines.

Page 456: The main Micronet menu.



To run this system, you need two pieces of hardware. First there's a software cartridge (OEL Comms cartridge) which fits into the expansion port. The modem (Prism 1000) connects to the cartridge and the Phone socket. The telephone connects to the rear of the modem. To log on, select the correct option on the software menu and enter your user number. You then dial the computer and, when you hear the carrier tone, the modem is switched on-line and the phone replaced. Enter your password and you're in business: it's a fast and unproblematic log on.

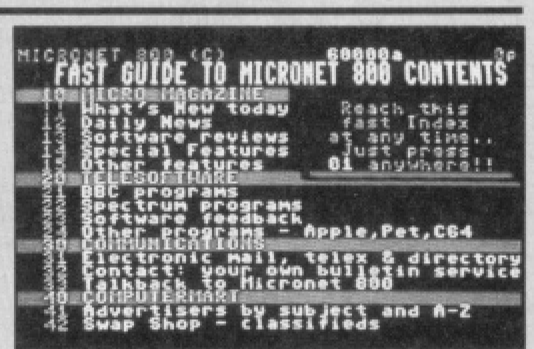
Once logged on, you're given the main index to Micronet. The Prestel database uses the same nested directory system as Compunet, but access is slightly different. In this case you GOTO a specified frame. Due to the need to know your destination, most frames indicate how to access directly related frames.

Page 60003: Part of the full Micronet index.



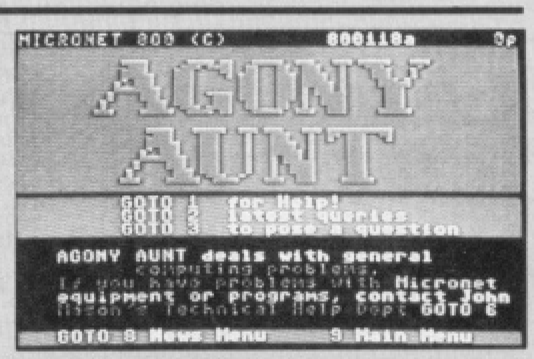
To make life even easier there are a number of indexes scattered around the place. Since you also have access to Prestel, there is the Prestel Directory to guide you about the main database. The nice thing about this system is the fast response to your commands — you can even leave a screen before it's fully displayed if you're quick about it. Typing in the commands is simple with * replacing GOTO, and I found the whole system pleasant to use. Probably the most annoying aspect was that I found myself continually referring to an index to get a frame number. No doubt with practice you get to remember the more frequently used numbers, but it does slow things down when you start.

Page 60000: The quick-reference index of features.



Let's get to grips with what the system has to offer. Prestel itself has been about for some time and has a huge reservoir of information on about almost anything you care to think of. Micronet has the same flavour. The above picture gives an idea of the goodies available to subscribers. Clearly in the limited time available to review this system, it hasn't been possible to examine every section. As a compromise, I'll describe the better known features of the database such as electronic mail, software and user interaction.

Page 800119: Agony Aunt helps out with problems.



The degree of user interaction in this system is limited in that you can only upload mail and text, as opposed to the frame option available on Compunet. But this state of affairs, is partly alleviated by the variety of interaction possible. Agony Aunt is an amusing example where you can get help with computer problems, so if your 64 has a habit of throwing a spasm, write in and — with luck — you'll get help. As you can see from the picture, the frame is self-explanatory and easy to use. Other areas of interaction include a small ads section, as swap shop, a contact facility and very crude electronic mail.

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The reason many people believe Compunet is run by Commodore is that (a) you need a Commodore modem to use the service, and (b) for the first six months it's only open to 64 users.

Although Compunet offers the same types of thing as Micronet, the design of the system is very different. For a start, you need an official Commodore Communications Modem to get in. This isn't (only) greed on the part of Commodore: the modem is part of the overall design of the system. It contains the communications software you need to logon to the system, an individual serial number and a simple screen editor. The editor can be used off-line (that is, when you're not connected to Compunet) to create and store text and block graphics screens.

Every CBM modem has its serial number in ROM. When you logon to Compunet, the system interrogates your modem's ROM to check this number. If the number is recognised by the system as a valid, registered modem, it allows you to enter your ID and password. The ID is then checked against the modem: if it matches, the logon continues otherwise you're thrown off.

This method of security has the advantage that nobody can use your account without your modem, but then neither can you. If you're away from home and want to check your mailbox, you'd better remember to take your own modem with you — you won't be able to use anyone else's.

The modem only contains the core of the communications system. The rest is automatically downloaded into your 64 when you logon. This means that Compunet can change and improve the software at any time without the usual problem of getting upgrades to users. This is a great idea in principle, but it does slow down logons since the updated software has to be transferred each time.

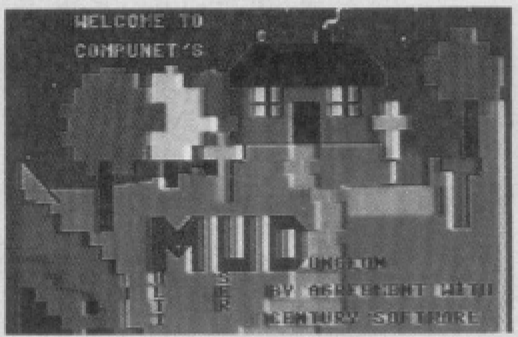
If you have a disk system, you can save the latest software to disk to be loaded next time you logon. This speeds things up considerably, but disk users are still in the minority in the UK (18% of *Y64* readers according to our reader survey).

Compunet is well designed. It's friendly, easy to use and attractive. However, it can be *extremely* slow. This is partly due to the error-checking system, which keeps re-transmitting blocks until it receives confirmation that the block was received 100% correctly, but partly, I think, due to the fact that Compunet is not capable of dealing with very many users at present.

To me, Compunet has one very strong advantage over Micronet: anyone can upload text and/or programs onto the system. You can make you own software available for downloading by other users either free of charge or for a fee. As Compunet is very new, the range of software available is not that great but the general quality seems to be very high.

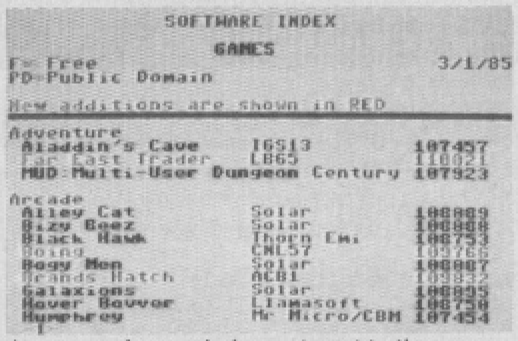
COMPUNET continued

Page 107901: One of the more eccentric contributions



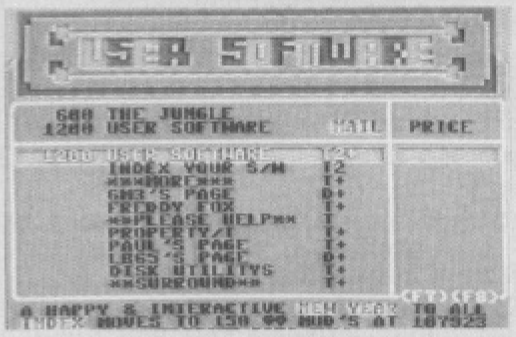
So how do you create the screens to upload into the computer? The modem contains a screen editor which enables you to create, save and load teletext-type screens. The screen above is an example of what can be created with the editor. You don't have to wait until you're connected to the system to create a screen, they can be prepared in advance and saved on disk or tape (this cuts down on the time you need to be on-line). The actual uploading procedure is simple and guaranteed to appeal to graffiti specialists — you can upload programs in a similar manner provided they're smaller than 30K, and if your masterpiece is of sufficient callibre, you can even make a charge for people to use or look at it.

Page 108174: The games index — the easy way to buy!



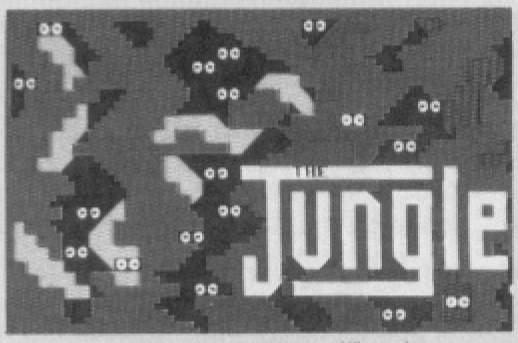
Most users will be keen to get their hands on the software available on the system. Software is handled in much the same way as the directories and frames. Here's part of a list generated by using]SHOW[to look at a frame called GAMES. This is effectively an index which gives the frame number of the particular items of software. The capital F to the right of the entries indicates free programs. It's a bit of a pain that there's no way of jumping directly from this directory to the game of your choice — to get to the game you have to enter]GOTO[followed by the frame number.

Page 107371: Users can sell their own software.



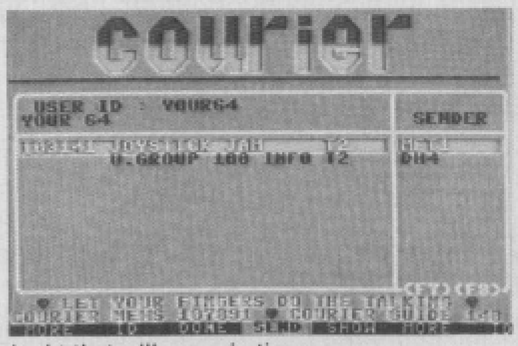
On most of the program directories there are two types of file. The T files contain text (such as instructions) and the P files contain the actual programs which you down-load using]BUY[. The system automatically debits your account (if the software isn't free, of course). Once the software has been downloaded, you can save it to cassette or disk. Probably the most irritating aspect of buying software this way is that you're buying "unseen" so you're taking a bit of a risk. Granted the prices are lower than on the streets, but you could end up buying something you don't really want. The range of software was fair and will grow as time goes by. There's a vote option which you can use to register your opinion of software. Potential purchasers can check the current average vote before buying — a very useful feature.

The jungle; Compunet's strongest advantage



As a database, Compunet doesn't offer much at present — it is, after all, very new. From the WHAT'S NEW frame, it's clear that a number of new areas are being developed. These include money matters, property and estate agents, and electronic purchasing. Many of these services will require membership or subscription to a specific user group or service. When I tried to stick my nose into some of these services I was rejected with a "You ain't a member so clear off"-style message, albeit more politely phrased.

Courier: select MAIL from the duckshoot.



So how does the system perform overall? The most noticable aspect is the sluggishness of the computer. After a while it got extremely tedious waiting for the frame to be refreshed. On the whole the system is quite user-friendly and forgiving of input errors, and the use of directories is tolerable and it isn't too tough to get about. I like to see some kind of master directory, similar to that used for software, to enable rapid access of the system but no doubt that will come in time.

MICRONET continued

There are 'meeting places'.



Probably the ultimate method of interaction is the ability to converse directly with a fellow hacker. The software cartridge carries user to user software and can operate independently of the Prestel system. By pressing one of the function keys, you can drop into the software menu and enter user-to-user mode. You have four options offering facilities for exchanging software files, operating a user-to-user mail box system or a chat mode.

Page 600617: Commodore 64 software.



Unlike the Compunet system, Micronet offers software for a number of popular computers. Owners of Spectrum, BBC machiens, PETs and 64s are all catered for. The above picture shows the opening screen for the 64 section. It appears that the 64 material can only be accessed via the OEL cartridge. The strong point of the software section is the detailed information and reviews available, which means that although you're buying your software blind, you do have a fair idea what you're letting yourself in for.

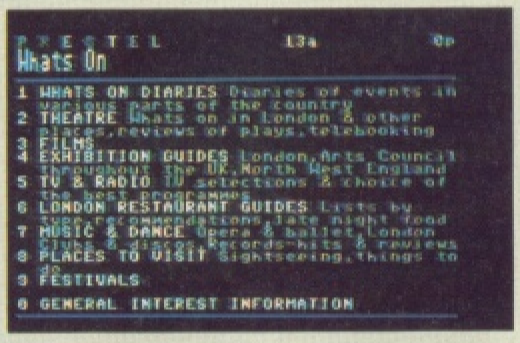
Page 60061712: Commodore 64 games for sale.



On choosing one of the software categories, you're given a list of the software with a two line precis of each program. If you want to find out more about a program, you select its frame number. The program itself is held in a series of frames. The first two give details of the size and cost of the program. Frame three gives downloading information and the program is stored in a number of subsequent frames. To download, you drop into the cartridge software all is clearly explained.

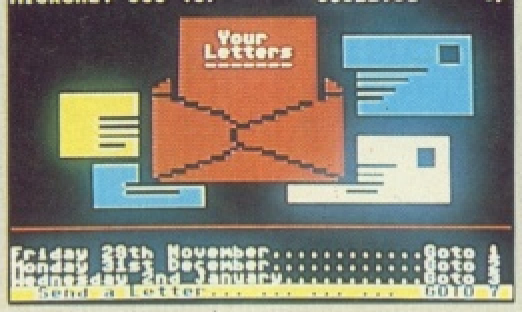
The downloading and saving to cassette or disk is automatic. I experienced problems with the cartridge crashing after downloading, but this turned out to be due to a fault in the cartridge. The range of software is reasonably good but tends to concentrate on games.

Page 8001161: What's on?



Without a doubt, the selling point of the Prestel system is the huge range of information available. For computer addicts, this includes information on exhibitions and functions, reviews, advertisements and news: I found it overwhelming and totally absorbing. For subscribers with wider interests, Prestel is equally absorbing.

Page 8001170: The letters page.



Micronet has the slick feel you'd expect with a developed product. The depth of information is significant and as such provides a valuable service. Due to the large number of frames on the system, the regular use of an index is necessary but this is particularly offset by the fast response to commands. The services to the computer user are comprehensive and a number of computers are catered for, there's also a fair range of software but it does seem to be biased towards games.

COMPUNET vs MICRONET: THE COSTS

	COMPUNET (£)	MICRONET (£)
Modem and software	99.99	129.95
Subscription charge per year	30	52
Connect time per hour	7 standard, free off-peak	3 standard, free off-peak

Storage on Compunet costs 1p per page per day.

Another attractive feature is that, whenever you buy software on Compunet, you're given the right to vote on it. You can do this anytime up to a month after purchase, so if you think you've been ripped-off you can at least warn other users!

And, of course, there's MUD! Multi-User Dungeons & dragons allows you to have the pleasure of an extremely sophisticated and extensive adventure with the added bonus that you're also playing against other Compunet users — in real time! (See *Talkin 64, issue 6* for more details.)

The major problem with Compunet is that of uploading. At present, you can only upload at 75-baud — and a short program or even a one-page letter can take an age to transmit because of Compunet's error-checking. You know that, when it eventually does get there, it'll be 100% correct, but you'll probably drink a lot of coffee in the meantime.

Which Net?

It's not easy to compare the two systems since Compunet is much younger and still very much in the formative stage. Early users will find that the system grows perceptibly each day.

Both systems cost about the same. Micronet has higher start-up and subscription costs, but the connect charge is cheaper than Compunet. A Micronet modem (including 64 software) will cost you £129.95. You then pay £13/quarter and £3/hour connect charge. Off-peak times (6 pm-8 am, plus all day Saturday and Sunday) are free. Anything you buy from the system is, of course, added to your bill.

A Commodore modem costs £99.99. You don't pay a subscription for the first year, but after that you pay £7.50/quarter. The connect charge is £7/hour, but — like Micronet — off-peak hours are free. Again, anything you buy is added to your bill. On Compunet, you can check your account status at any time by selecting ACNT. This will give you an itemised account if you wish.

The overall design of the systems is the same — a series of menus and sub-menus. Micronet is generally faster while Compunet is friendlier.

Y64 ON COMPUNET

Y64 is currently setting up a database on Compunet. Eventually we hope to enable you to download all **Keyboard Kapers** and **Scratchpad** listings, but you should find a selection available by the time you read this.

For most listings, we have to make a charge of 50p per listing to cover our costs on Compunet, but smaller listings are free. You can also SHOW datasheets which provide brief details about the listing and refer you to the appropriate issue and page of the magazine before downloading; these datasheets are, of course, free.

You can send letters to us on Compunet by addressing Courier mail to YOUR64. In the case of letters sent before 6 pm, we'll usually receive them the same day.

In the meantime, if you have any ideas for things you'd like us to be doing on Compunet, let us know! **To reach the Y64 area, simply GOTO 109227.**

ACTION REPLAY

No. of players · Joystick · Joystick optional · Cassette · Disk

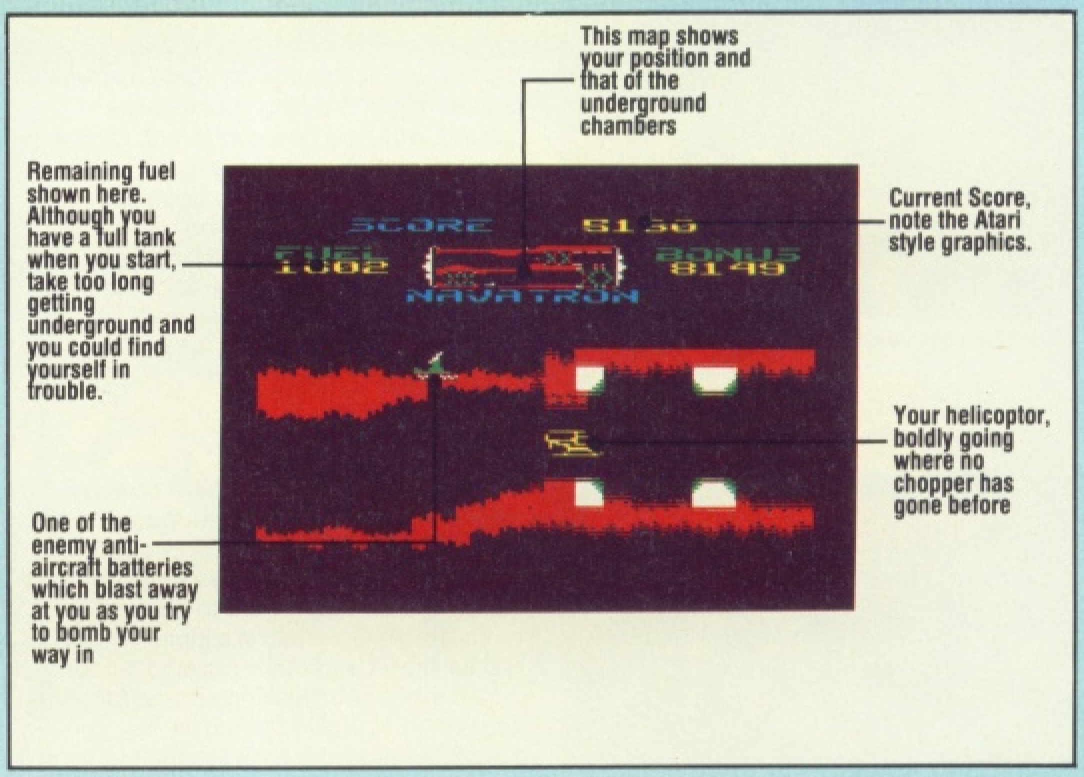
FORT APOCALYPSE

★★★★

US Gold/Synsoft/£9.95 cassette, £12.95 disk

Fort Apocalypse is one of those games where you must fight against impossible odds to rescue some people being held by some nasty or other. Personally if I was put in that sort of situation in real life I'd say it was the hostages' own fault for getting stuck there in the first place and they can get themselves out, but never mind.

You control this helicopter, which first has to refuel. (Why it couldn't have gone before I don't know). Then you've got to fly the thing over these tanks and avoid getting shot up by them and the enemy helicopters. You can shoot the copters but I for one couldn't shoot the tanks, though bombing them was quite effective. You also have to bomb your way through a hatch to enter the lower level. To do this you have to hover close to the ground. For the life of me, those bombs falling from the copter reminded me of bird droppings, but as you're being fired at from all sides I suppose this is appropriate. One you've blown a big enough hole you can fly into the caves to rescue the hostages. There must be an easier way of rescuing people than flying a helicopter in underground caves.

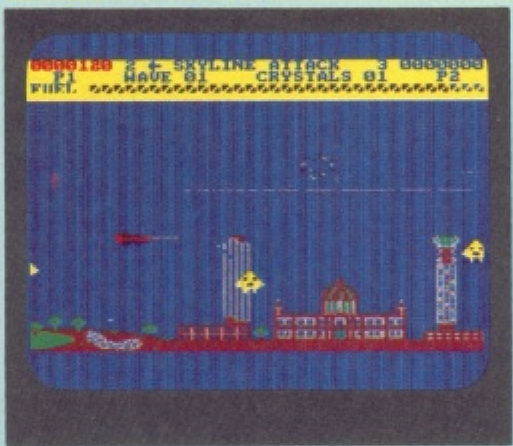


If at this point you thought you were in Fort Apocalypse itself, well you'd be wrong. Before you get there, you've got to blast through yet more doors without banging your head on the ceiling and explore the caves for the rest of the hostages. There are also other nuisances to deal with such as the hyper chambers, which zap you from that chamber to one or other of four identical chambers. That's not so bad until you try to find out where you are. This is a game that requires a good deal of skill on the joystick and I found it thoroughly addictive.

SKYLINE ATTACK

★★★

Century Software/£7.95



Inter-City Software

Have you ever noticed that when it rains, all this sooty stuff comes down with it? Ever wondered what is it? Well, the answer is provided in Skyline Attack.

Not many people know this, but it's aliens. No, straight up, would I lie to you? The object of this particular exercise is to wipe the aliens from the skies of ten of the world's great cities, starting of course with London. As you progress through the game you find yourself blasting away over a different city. Who says you never get to see the world playing arcade games?

This is a good game in a Defenderish sort of way. The action is fast and furious and although the aliens are not wildly imaginative, there has been no attempt to make them zany, a feat which ought to be avoided by 99% of programmers.

As you blast your way through the umpteenth alien, you'll notice that some of them turn into fuel cells, which have to be collected if you want to stay in business any length of time. If you blow up the fuel cells they turn into crystals which also ought to be collected.

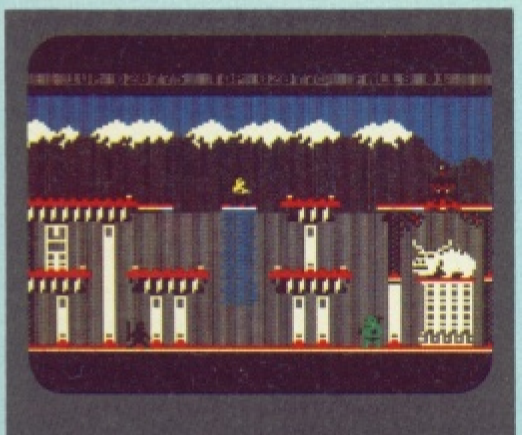
Mind you, collecting the fuel cells is an awkward operation as you tend to run into the nasties as you dive to pick up the cells.

An unpretentious little shoot-em-up, which has all the qualifications required of such a game. By the way, don't look up!

BRUCE LEE

★★★

US Gold/Datasoft/£9.95 cassette, £14.95 disk



Chopsticks required

Ayyyyeeayeatttaklunkatunkayeowwwwww! I feel better for that. For those of you who wish they were able to kick faces in other people's sand without having to spend fifteen years in a Chinese monastry, Bruce Lee is for you.

As the high-stepping Chinese firecracker, it's your job to enter the palace of the evil magician and give him a good kicking. Of course the first thing to do is break in. This requires the shinning up of walls and the negotiation of pagodas.

Once inside, there are villains to overcome. There are the Ninja, which look remarkably like the SAS. There are also Sumo wrestlers called the Green Yamo which to me sounds liks a side order in a Chinese restaurant.

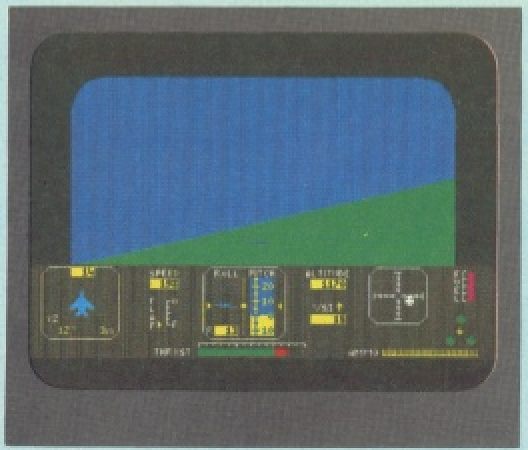
As these unsavoury characters attack, you can, via the joystick, jump, kick, chop and all kinds of things they tell you not to in the Marquis of Queensbury. The Ninja go down quite easily, the Yamo, being big lads who eat their side orders, are more difficult.

The trick is to get in close and then give them your best Yake Toke flying kick, (that's one in the goolies to you chum) while avoiding the same fate happening to you. Otherwise you miss and look silly.

Quite a good game although I would have prefered the sprites a bit bigger so I could see what I was doing.

FIGHTER PILOT
Digital Intregation/£7.95

★★★★


The wild blue yonder

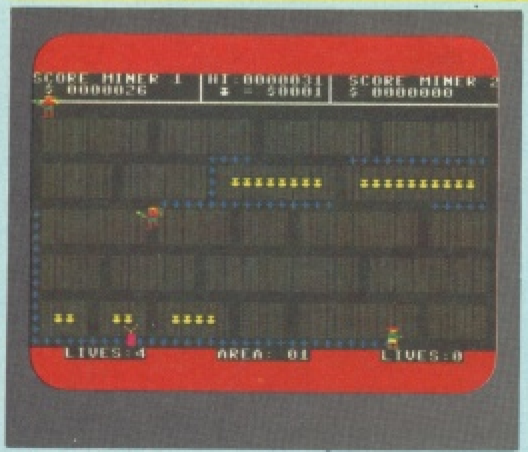
There are flight simulators and there are flight simulators, and by golly this is a flight simulator. Digital claims that the simulation is as accurate as it can make it within the limit of the 64 and what the Pentagon keeps secret and I believe it. As you probably know, most simulators on home micros consist of just wiggling your joystick around; well, this one is different. Digital Intregation has gone out of its way to make the control of this beast as close as possible to the real thing (the real thing being an F-15 McDonnell-Douglas fighter). There's not just the joystick to control, but also the flaps, thrust, brakes and undercarriage to consider, as well as airspeed and turbulence. All of this, of course, is before you begin combat training.

To someone like me who has difficultly in walking and chewing gum at the same time, it all got a bit much and I spent most of my time trying to keep my nose out of the ground even in training mode. Still, for those who have been wingeing about there not being a proper flight simulator around, now they'll have to put their money where their joystick is.

Once you do get into the air you can start looking for an enemy aircraft to do battle with, slippery characters they are too.

CALIFORNIA GOLD RUSH
Software Super Savers/£5.95

★



Blockheads

There's been a whole stack of cowboy-related games recently. I suppose it's got something to do with having one in the White House, but somehow high tech and horse operas don't seem to go together.

California Goldrush is a close relative (I would say incestuously close) of another game that's been kicking around for some time now called *Oh Mummy*!

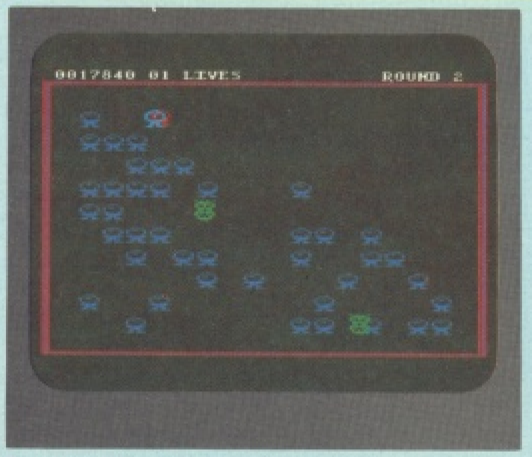
In that game you walk around blocks in a pyramid which opens to reveal treasure, while avoiding mummies. In this game you walk around blocks to stake your claims which reveal gold, while being chased by injuns.

Despite the fact that *Oh Mummy* was so easy even I could do it, I never took to the game and that goes double for a photocopied game like this. I suspect that the programmers spent more time trying to think up a new scenario for *Oh Mummy* than coding. I rather wish they hadn't bothered at all. I mean, haven't these people even got the wit to try to swipe a good game?

It makes me laugh when software houses winge about pirates ripping off tapes when so many of them are pirates thieves. Once you've completed one trek round the squares, guess what happens, yes that's right you get another load of squares to walk around. Thrilling isn't it.

DRELBS
Synsoft/£9.95

★★★★



Boxing clever

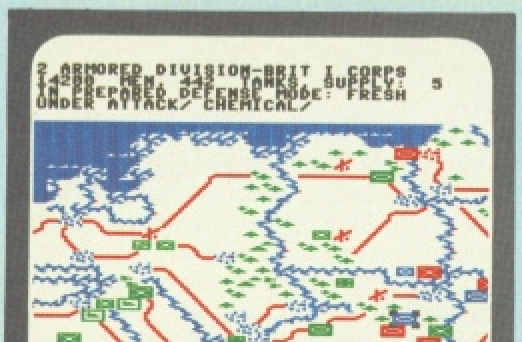
Drelbs is another of those weird little logic games. When it first loaded I thought it was Pacman. However, these things are not that simple.

Remember that game you played in the back of maths classes where you join up the dots to make squares? Well it's like that, only you have to spin the lines in a maze to make the squares. Meanwhile there's this sour-faced thing that chases you round, and a bacteria-like thing that wanders aimlessly firing random shots in the maze which bounce around wickedly. Once a box is created it flashes sort of psychedelic like and sometimes a face appears, which is either nasty, in which case it zaps you, or if it's a girl's face gives a bonus screen. As the boxes get filled it's more difficult to move around. Furthermore the boxes that have faces in them have a nasty tendency to undo your nice boxwork. When you've filled up all the boxes you can, you're presented with another maze at a higher level. I quickly found the knack of getting maximum boxes from minimum effort but Drelbs is an interesting game which requires fast thinking as well as fast reflexes.

The bonus screen is a higher level where you fight off the evil creatures which are keeping the Drelbs captive. I think I'll recommend this one.

NATO COMMANDER
US Gold/Microprose/£9.95 cassette, £12.95 disk

★★★


Red Star White Star

Following the success of Raid Over Moscow, US Gold has also released another WW3 game called Nato Commander. Ye gods, where did they dig up this month's software? Distilled water tastes like haute cuisine by comparison.

Nato Commander is a strategy game on much the same lines as Nordic War, with various armies and stuff to move about a map, this time of Germany.

As NATO commander, it's your job to preserve peace and freedom as we know it by bombing the godless commies.

As there are a lot more Warsaw pact forces around that our boys, you look to be batting on a sticky wicket to start with. Coupled with this is the fact that the Reds seem to appear from nowhere (they must have been hiding under the beds or something), you realise being a NATO general isn't all parties in Brussels. It's interesting to note that when the Russians strike, it's called a surprise attack. When you do, it's a pre-emptive assault. You pays your money and you takes your choice.

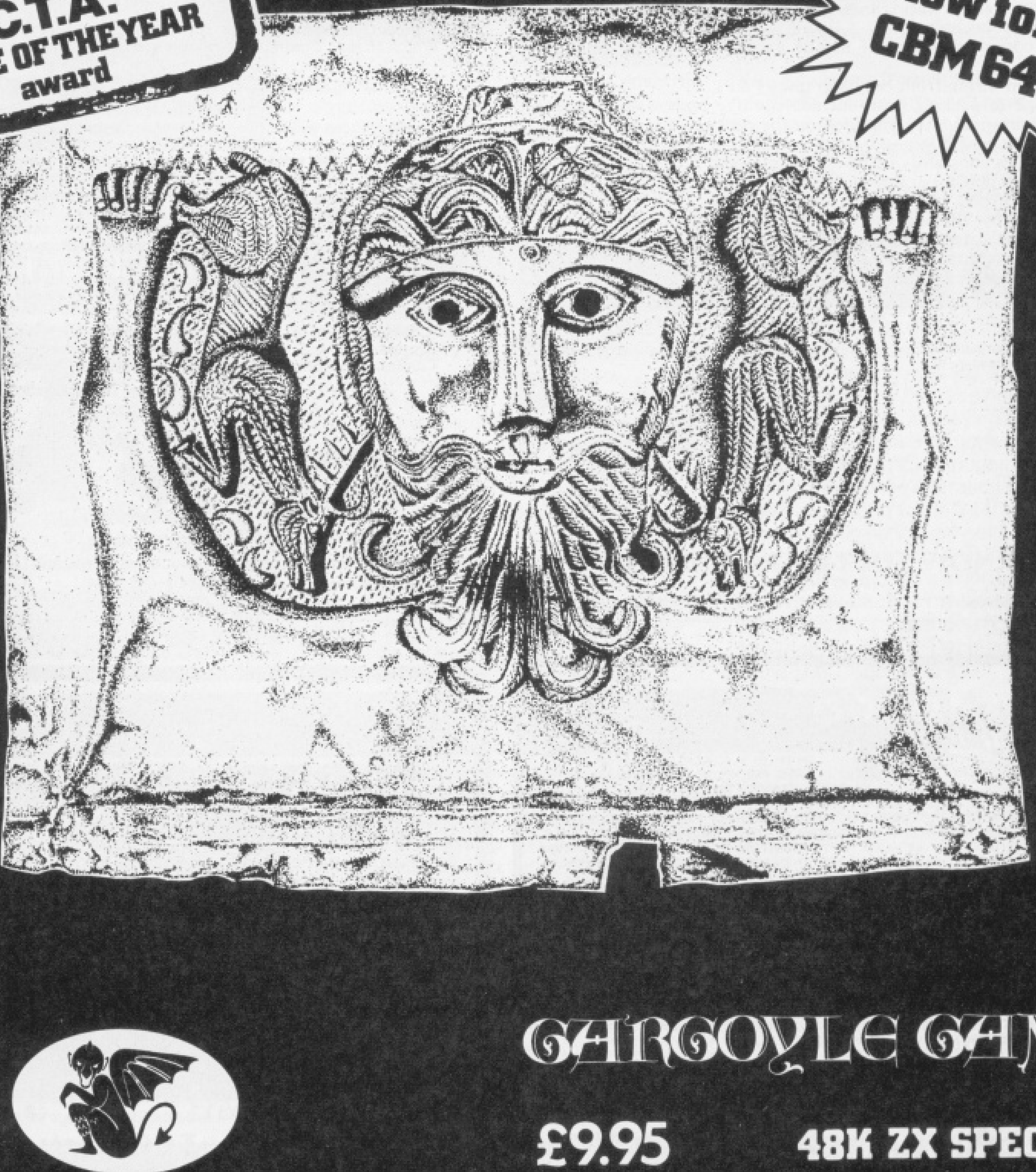
The computer fights much better than in most such games and even in easy mode, you'll have your hands full.

If things really start to get out of hand you always try throwing a few nuclear warheads or nerve gas around but it doesn't do much for your standing in the community.

tír na nòg

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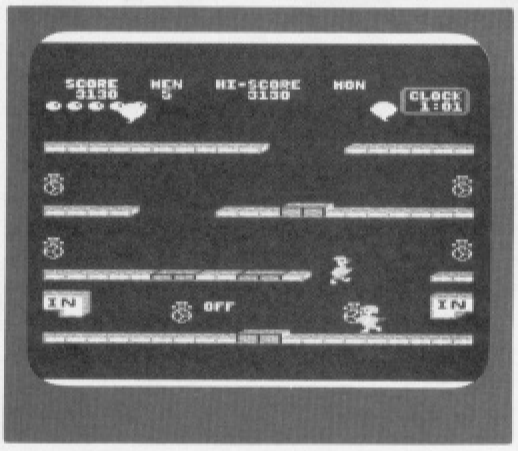
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TOY BIZARRE
Activision/£9.99 cassette £10.99 disk



Toys annoys

Merton is the nightwatchman at the Gizmo Toy factory and the toys are revolting, sorry, are in revolt.

Now let's see if I've got this straight. Toys appear on one of the platforms. They attempt to make their own way down to the bottom where they jump into a box marked IN. This causes balloons to expand at the valves on the platforms which explode to produce another toy which moves down the platforms. Right. Where does Merton come into all this — damn, I thought you were going to ask that. It's Merton's job to turn off the valves which blow up the balloons which explode to produce toys which then, well you know the rest.

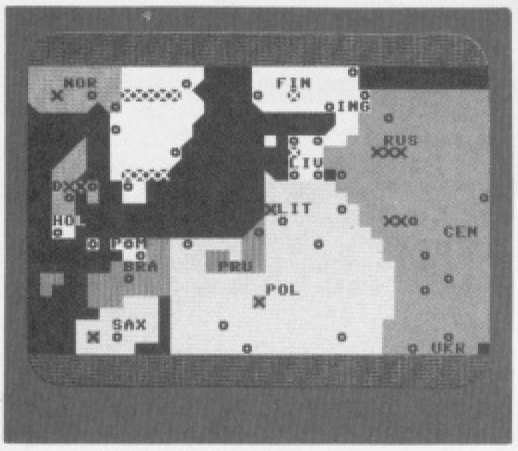
Scoring is done by turning off the valves, these are then turned back on by Hefty Hilda which are then turned off by Merton and turned on by Hilda and ... oh, you get the idea already.

This game is very realistic; the boredom that creeps over you while playing this game is identical to the boredom of night duty.

As it's a game from Activision it has one thing in its favour. It doesn't have the music from Ghostbusters on it with which the Y64 staff have been driving me crazy for the past week.

One of those games where you don't really care what happens.

THE GREAT NORDIC WAR
Romik/£14.99



Bogged down in the Baltic

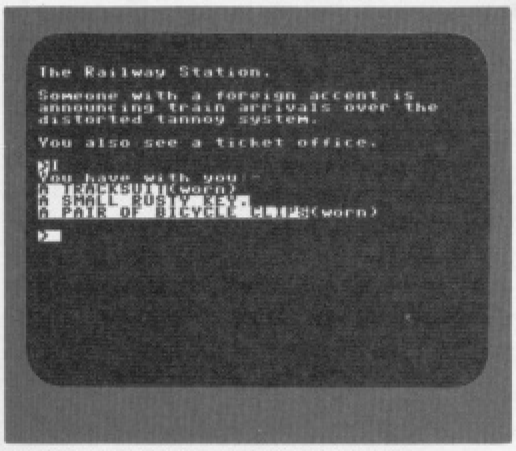
I used to be quite good at these sort of games. I once held the western allies at the Rhine until August 1945. However, computer controlled games are different. Playing on a board where you can see and move your pieces is one thing, at least you can concentrate on what you're doing. When you have to grapple with a half-explained operating system it's quite another.

The Great Nordic War is produced by Romik software which presumes that everyone knows all about how Karl XII got himself into this shtuck in the first place. Unlike most games these days, TGNW is not turbocharged, which means it takes about 10 minutes to load. (Romik presumably believes there is nothing wrong with the 64 loading system). Secondly, strategic games of this type need a wealth of information on both playing and tactics. The instructions for this game take up eight not-so-densely-packed pages of a small booklet. Finally, the operating system will quite happily land you in a corner with no help to tell you how to get out.

Despite being obviously written in Basic, this could have been a much better game.

Mind you, I did get involved in the game running round Scandinavia fighting Peter the Great, the King of Denmark and old Uncle Tom Cobbly and all.

HAMPSTEAD
Melbourne House/£9.95



Software for the upwardly-mobile

In this grim time of recession a young man's fancy turns to thoughts of getting on. The trouble is, though, I mean, take a look at yourself. When you aren't dribbling into your joystick at some shoot-em-up, you're staying up half the night banging your head against some tricky algorithm. How is a slob like you ever going to get on?

Never fear — help is at hand. The good people at Melbourne House have come up with a game just for you.

Hampstead is the game for social climbers. You start off starkers in a smelly council flat in London NW watching 3-2-1 and on the dole. Well, my boy, it's time to get on yer bike and look for work.

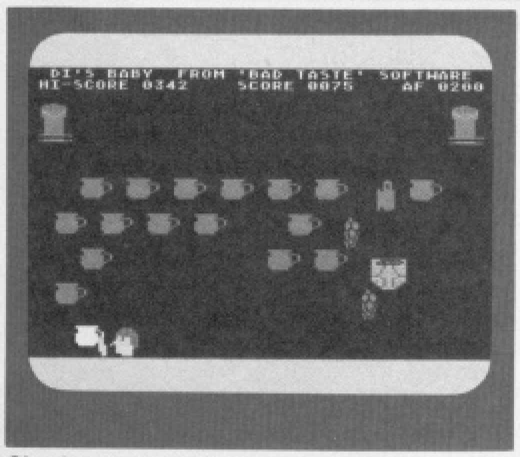
A sociologist writes: "Hampstead iz a game ov social manners and iz a vitty observation ov zer contemporary scene in zer London of zer 1980's". In other words, chum, you'll probably recognise yourself.

Luckily, the designers haven't got carried away with too many Hampstead in-jokes so it doesn't become meaningless to those beyond the Watford Gap.

A text-only adventure, which is a shame for a company that made its name with graphic adventures.

This is one of those adventure games that does not so much present you with insoluable teasers but needs to be approached systematically.

DI'S BABY
Bad Taste Software/£6.95



Charles goes potty

Well, you've seen the commemorative mugs, pictures, calendars and magazines, why not commemorative software?

Di's Baby, from Bad Taste software, is disgusting, an insult to our beloved royal family, these people ought to be put in the tower, hanging's too good for 'em. Right, having ensured my knighthood, let's look at the game.

The first level, The Joys of Parenthood, involves Charles collecting unmentionable stuff which can best be described as the royal wee, from a load of potties while avoiding getting covered in the stuff. I thought it was supposed to be lucky.

The second screen, The Conception, involves Charles making it. To Diana's bedroom that is, whilst avoiding prams and guards and other palatial obstacles. In level three, Diana has to fulfil public engagements while avoiding photographers. Screen four is the dash to the hospital, avoiding unpatriotic types like CND marchers and striking miners. Finally, at the Delivery, Diana has to catch young Henry as he is dropped by a stork.

Although some of the coding is a bit ricketty, I loved it.

Despite the fact that it tried so hard, I award this game Golden Gaschamber of the month (for tastelessness above the call of duty). Arise Sir Di's Baby.

VIZASTAR 64

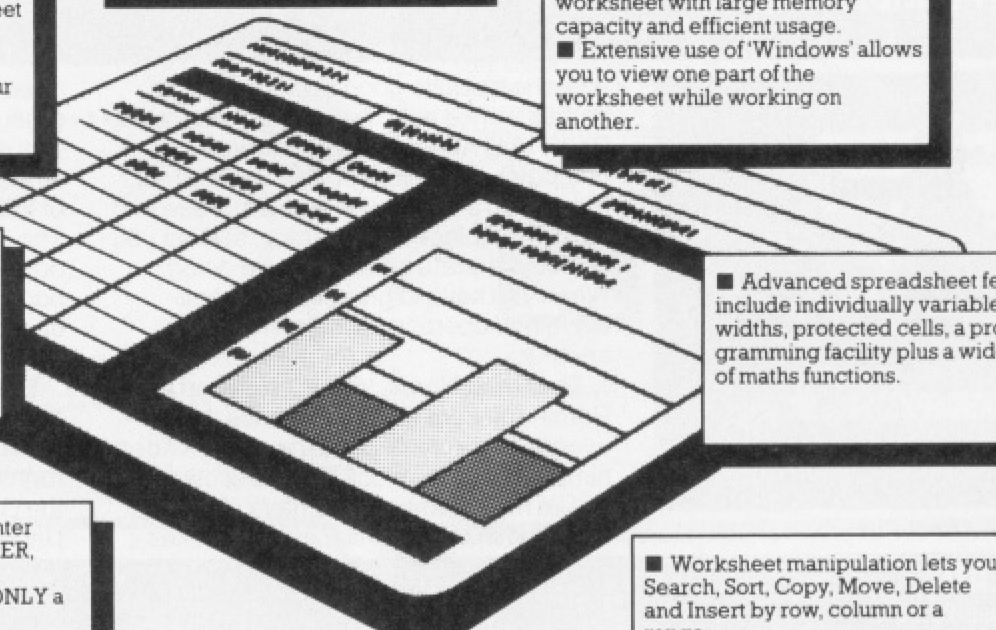
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ACTION REPLAY

GUN DOGS
Hill MacGibbon/£5.95



Out for a duck

For all you budding Elmer Fudds out there, Hill & MacGibbon bring to you Gun Dogs. Out there in the wide open spaces trying to being down the duck meat with your trusty twelve-bore. However, there's a problem. Ducks have this tendency to live near water. So who is going to do the wading and pick the corpses out of the river? Why none other than your faithful hound.

To get the ducks, the gun dog has to negotiate the currents while avoiding logs and for some reason the fish. A dog's life you might say. At the higher levels there are more deadly fish to avoid and a fox pinches the ducks out of your basket.

This is a one or two player game and is one of the few games which are better with two players as they can poach each other's ducks! The gun is aimed automatically (all you have to do is decide when to fire) which leaves the joystick free to guide the dog, which bounces around happily.

For those of you who cry 'fowl' this game is rather too cartoonish to be considered tasteless. While there's not a great deal to it, it is good fun.

Extra points are scored for fishing the Sunday lunch out of the river, even more are achieved by getting the duck from the island in the centre of said river. No points are lost for losing the dog, just a bit of time before another appears but life's like that.

PITFALL II
Acitivision/£9.99 cassette, £19.99 disk



Send for the red cross!

What can I say about this game? The graphics are good, there's a whole complex maze with beasties to encounter and treasure to collect. Pitfall II has all the makings of a fascinating game, yet I don't think I've played a game which annoyed me more for a long time.

The idea of the game is that you descend into this 'ere cavern and collect the gold bars that somebody has thoughtfully left for you, whilst avoiding falling off of ledges and being eaten by the denizens of the cave.

On the face of it, it looks like a good idea. There are red crosses dotted around the maze. Every time you get eaten by something, instead of losing a life you just get sent back to the last red cross you passed. The trouble is that quite often you get a long way into the maze then fall just in time to run into a bat or something and end up getting sent back to where you came from. I wouldn't have minded so much, but you drift back through all the maze that you've just fought your way through. I'm a mild mannered chap by nature but after I'd been sent back to the same red cross for the nth time I came very close to putting the joystick through the TV screen.

However, all this is my problem. If you like this sort of hunt-the-treasure-in-the-cave type of adventure you'll like this one as it's got more variety than most.

DUNGEONS OF BA
Quicksilva/ £12.95



Danger in the dungeons.

Meanwhile, back in the dungeon we are presented with "a real-time action adventure game" from Quicksilva called the Dungeons of Ba.

You are Norman the Warrior (ever heard of a hero called Norman?), who has entered the long abandoned Dungeons of Ba in search of the Stone. Don't ask me what stone it's talking about, perhaps the dungeons are the only place Mick Jagger can get any privacy these days.

There appears to be a good reason why the place is abandoned. Apart from being one of the more boring looking pieces of real estate you are ever likely to visit, it's populated by the usual menagerie of beasties, guards and traps which usually end up in these places.

Our hero, Norman, a small, squat, bearded character looking not one bit like the romantic-looking fellow on the cover, who carries what looks like a large ice lolly, shuffles his way through the corridors gaining hard-won experience by fighting the lugubrious-looking graphics characters on the screen. Occasionally Norm will walk into one of the traps, some of which send him to a point back along the corridors, some of which will squeeze him into Norm juice and dump you unceremoniously out of the game.

BEST OF THE REST

On this month's white elephant stall we bring to you from Channel 8, *Time Zone — The Challenge Remains*. Too right it does. The challenge remains to write an original game and not pinch Defender and add on a few 'wacky' sprites.

Stockade from Wordlight is a Wild West adventure, in this case Portcawl, Mid Glamorgan. Bored looking cowboys attempting to shoot equally bored looking injuns.

Mind Control from Mastertronic is, I'm afraid, another of those you-get-what-you-pay-for £1.99 jobs. The idea is you enter the mind of Zyco the Indestructible alien to destruct him (her? it?). Nice idea, but it all comes down to blasting the inevitable nasties in the form of antibodies. Mind Rot.

Ever thought what you are going to do when you grow up and stop playing with computers? Get into practice now with *Bristles* from State-Soft at £8.95. The aim is to paint eight buildings. With nuisances around like flying half pints and Brenda the Brat who puts her sticky hands every where which means repainting, it all ends up like the Forth Bridge. This game also features a 'Sex Select', which I liked the sound of, but it turned out to mean that you could choose to be a boy painter or girl painter (chiz chiz).

Jet Power Jack from Micro Power is yet another of those games where yer intrepid spaceman has to go around collecting fuel pods from platforms, whilst avoiding the unwelcome attention of aliens.

Meanwhile, back in the magical caves of spells, giants, dwarves etc, etc our hero, this time called Malhek, is still on a quest to become the sorcerer supreme or whatever he is after this time. A text only adventure, much the same as all the other adventures with magical caves. No great shakes. By the way this one is called Aliards Tome from Romik, just to distinguish it from the rest.

POWER GAMES

Presented with a sensitive political situation, US Gold has celebrated the act of open aggression existing between East and West in its latest game. Join Chris Dabbs and Surya, our intrepid fighter-pilots, as they battle their way beyond the Iron Curtain to save the world from those dastardly Ruskies!

R*aid Over Moscow* is one of the best games that's been written for the CBM 64 . . . it's also possibly one of the most tasteless! Constructing a defence policy around a rather imaginative game of *Space Invaders* is one thing, but can encouraging games programmers to cash in on the sensitive political situation that exists between East and West be considered responsible?

Mission Impossible?

In the game *Raid Over Moscow*, you're promoted to the rank of squadron commander of a US space station, charged with the defence of the good ol' American way of life. The villains of the piece, as if you couldn't guess, are the dastardly Ruskies who've started launching ICBMs at Yankee cities. And, before you've got a chance to look up the rules for the whereabouts of the 'Peaceable negotiation' key, there's a nuclear missile winging its way to flattening one of America's finest!

Your first task is to escape the Mothership hanger; this is a bit tricky to begin with but you'll soon get the hang of it. Once clear of the hanger, the screen cuts to an overview of the Northern hemisphere on which you're able to guide your craft to the general area of the offending launch site.

You're now on a low level approach to the target, and the screen layout is very similar to *Zaxxon*, although the screen scrolls horizontally this time. Once you've run the gauntlet of the tanks, SAMs and so on, you have five gun emplacements to destroy; if you're feeling confident, have a go at all five . . . but if time's running out just go for the centre gun emplacement — that'll stop the clock and allow you to move on to the next stage.

End Game?

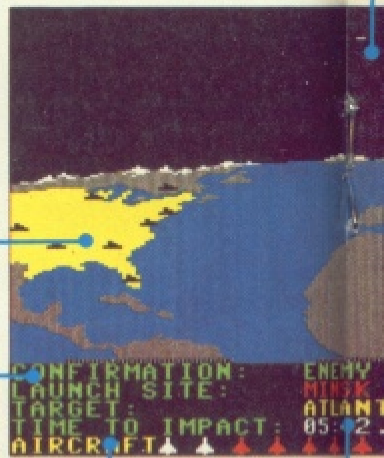
Gaining entrance to the Soviet defence centre is a little more unfriendly than just knocking on the door — you've got to

Atlanta here ... Russian missile due to impact in six m

My fellow Americans, I . . . crackle, buzz . . . He on a bird heading for Atlanta, Georgia . . . zzzt, *date with the Kremlin . . .*

You have nine ships at your command, and you can launch as many ships as you like at once; you can only guide one ship at a time, so any extra ships you've launched are shown as blobs hovering around the Mothership.

Here are the threatened US cities. The target city (in this case, Atlanta) flashes as the missile approaches.



This value is totally pointless — there's always an enemy launch detected!

This indicates how many ships you've got left; as you can see from the highlighted ship outlines, there's only two left from the original nine.

This is the all-importa time left before the mis target. The initial time distance between the l target city. You'll have together very quickly a decreases before your as soon as it reaches z the target city disappea cloud.

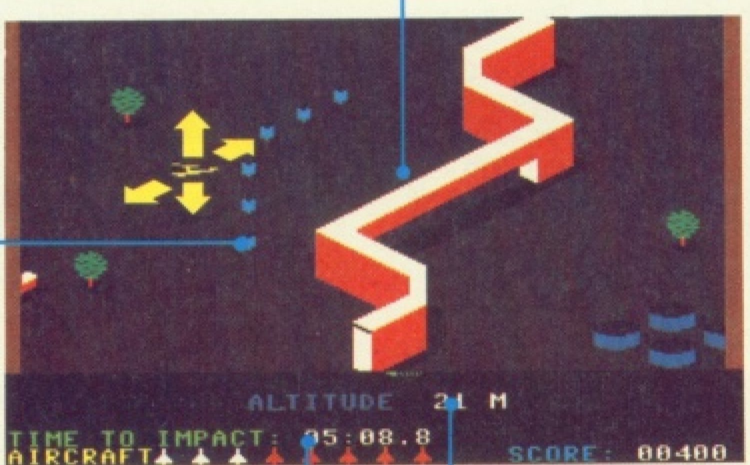
STAGE 1

T minus five minutes 8.8 seconds ... and counting ...

Red 2 to Big Mutha, over . . . fzz, dwwep . . . State your position, Red 2, over . . . zzzzz, rreez . . . *Approaching Minsk, Big Mutha — hey, we got a bus-full of peasants up on the radar, we're gonna go blast 'em, catch you later . . .*

To get through the perimeter defences, you have to dodge ground obstacles, passing missiles and Soviet defences. Anytime you go higher than the top of the wall, you're liable to get shot down by a missile — they come from behind, so dodging them ain't that easy! Your best bet is to try and manoeuvre your ship under the wall ... otherwise it's Goodbye Vienna (and probably, New York and Seattle too!).

Needless to say, virtually everything on this screen that looks solid can destroy your ship ... if you should do anything as silly as to fly into them. Although not shown on this particular screen shot, there's a far from friendly helicopter that not only gets in your way but tries to blast you out of the sky as well! Not to mention the bus full of peasants and the tanks that get in your way ...



Don't forget to keep one eye on the time — run out and it's all over!

Your altitude is an important figure to watch here — especially when you're preparing to dive under the bridge.

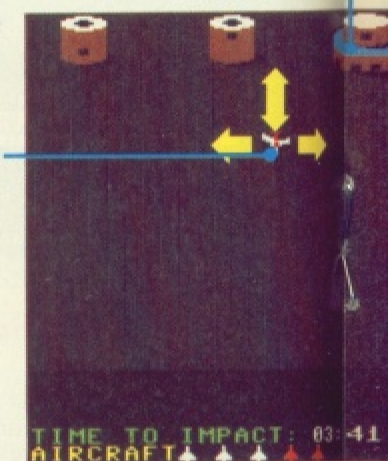
STAGE 3

Err ... you've only three minutes 41.7 seconds left, Re

OK Red 2, you should have five gun emplacem middle one and get out of there, you copy? . . . *other ones too, Big Mutha?* . . . whoop, frazap seconds to impact, soldier! Obey orders, and c

This bit's like Space Invad mission is to destroy the g while trying not to get sho emplacements or the Sovi enemy planes get gradual blast them out of their or vice versa.

The enemy planes follow you, both horizontally and vertically. However, the algorithm used is a very simple one, so the planes are more of a nuisance than a danger.



Dodging emplace slow you as ho that you'

STAGE 4

act in six minutes nine seconds ...

uzz . . . Hey Ron, Big Mutha here, we got a sighting
a . . . zzzt, fwip . . . *OK guys, it looks like we got a*

u

This is the Mothership — the space station housing your defence force. At the beginning of your mission, you take off from here, gliding your ship down to the launch site of the Soviet missile.



Soviet cities, like US ones, are shown as black shapes on the map — somewhat akin to Space Invader bases! The launch site you've to destroy (in this case, Minsk) is highlighted in white.

e all-important figure — the before the missile reaches its e initial time depends on the between the launch site and the . You'll have to get your act very quickly as this figure s before your very eyes — and, s it reaches zero ... BOOM ... city disappears in a mushroom

This here's your score. You don't get anything for crashing ships on the way out of the Mothership — hence the disastrous score so far!

Time to impact ... five minutes 42.3 seconds ...

Big Mutha to Red 2, over . . . chrrt, zeep . . . What have you got for us, Big M? . . . ststst, pweep . . . It's the big one! I wanna see you guys make like the eggs mom used to make for breakfast — I wanna see you SCRAMBLE!! . . .

On this particular screen, you have to guide your ship safely out of the Mothership in low gravity — something that's easier said than done until you've had a bit of practise! Move the joystick left or right to turn the ship, forward for thrust and press the 'fire' button for vertical thrust. The ship has fairly realistic inertia, so it can be quite difficult to control at first.

You have to open the Mothership doors yourself by pressing the 'F7' key. But wait until you're ready though — the doors only remain open for a few short seconds before they close automatically. Many a would-be pilot has bitten the dust by getting caught in the doors as they close!

When you launch a new ship, the pilot strolls leisurely through this door to the ship. At the speed he walks you'd think he was just popping out to buy the morning paper ... rather than saving the world from impending nuclear destruction!



At the rear of the hanger, there's a deadly force field — if you allow your ship to get out of control, watch out! The force field is indicated by the lights at the bottom of the screen — the lights turn bright red if your ship gets too close.

This section tells you the velocity of the ship — the x figure indicates how fast you're travelling to the right, the y figure shows how fast you're moving forward (negative values mean left and back respectively). The 'VERT' value shows how fast you're climbing or losing height; if you accelerate too fast, you won't be able to stop in time — which means you'll probably end up decorating the hanger walls!

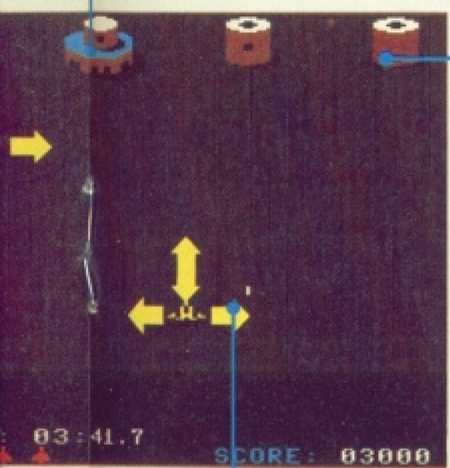
These figures tell you where your ship is in relation to the launchpad. The x co-ordinate indicates if you're to the right or left (a negative figure means you're to its left) and the y co-ordinate shows how far in front or behind (a negative value means you're behind). The altitude figures show you the ship's height above the ground; you need to stay at least a couple of metres above the hanger floor to get through the doors.

STAGE
2

nds left, Red 2 ...

emplacements on your radar — just go for the copy? ... zzap, fwizip . . . *Aww, can't we go for the* p, frazap . . . You got just three minutes forty-one ers, and don't forget — see purple and then fire!!

Space Invaders really. Your destroy the gun emplacements — hot to get shot back by either the ts or the Soviet planes. The s get gradually closer until you t of the air or, needless to say,



To destroy one of the gun emplacements, you have to fire into one of these holes — not an easy task! However, you do have the advantage of your ship flashing purple once you're lined up on target.

Dodging a misslie from one of the gun emplacements isn't too difficult, but it does slow you down a bit. It gets a bit tricky to line up a shot at the gun emplacements, knowing that you're a sitting target!

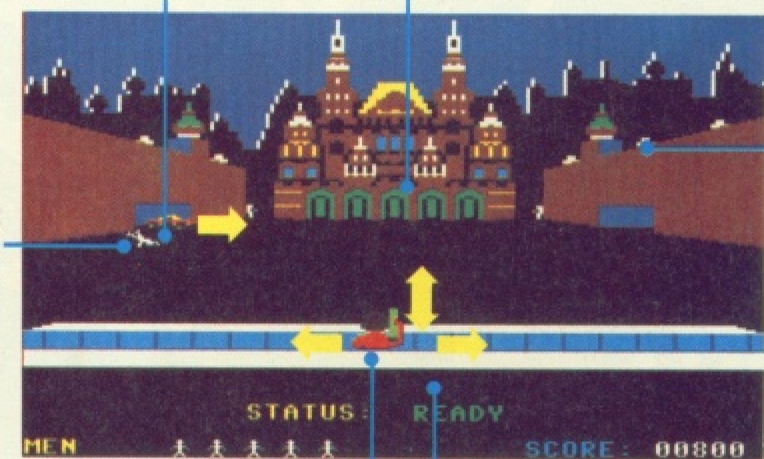
Hey, what's happening, Red 2 ... we've only got two minutes left ...

State your position, Red 2 . . . whizz, fradd . . . *We're overlooking Minsk right now — it's a real pretty town, Big Mutha* . . . ssspph, foolip . . . That's un-American, soldier . I wanna see you guys trash those towers and doors — and watch out for those Commie snipers . . .

Getting a decent shot at the doors can be a bit tricky, as the Russian tanks have been programmed to get in your way. If you blast it out of the way, you'll buy yourself a few seconds before the next one happens along. Use those seconds wisely ...

All you have to do to get through this screen and into the reactor room is to kill all the snipers, knock down all five doors and destroy the towers. Couldn't be simpler ...

When you shoot an enemy sniper, his body falls lifelessly to the ground. (You can't accuse US Gold of skimping on detail — taste, maybe ... but lack of realism, no way!)



Here we have a sniper. Each time a sniper's killed, he's replaced after a minute or so — this leaves you free to try your hand at blasting away at the towers and doors 'till the next sniper happens along.

Instead of the traditional fire-power, your gunner tends to 'lob' a missile, describing an arc as it rises and eventually falls on its target. The further back you pull on the joystick before you fire, the higher the missile goes — it'll probably take a bit of practise. but you'll soon get the hang of it.

As soon as one of your men is hit, another will replace him until you've run out of lives; watch out while your man's being replaced as you're unable to fire at the snipers for a few seconds. When the 'READY' status is flashed up on-screen, you can stop dodging the flack and fire back!

STAGE
5



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blast away at the doors and towers of the building, while dodging enemy sniper fire. But, at last, you'll find yourself face to face with the robot that keeps the nuclear core cool in the reactor room. Finish him off with four hits of your *Tron*-like disc and you'll avert the 'Big Bang' and verify that your mission has been accomplished.

Aside from its dubious political message, *Raid Over Moscow* is a good challenge for any serious games player.

Y64 DATACARD

NAME: RAID OVER MOSCOW

TYPE OF GAME: MULTI-LEVEL ARCADE

SUPPLIER: U.S. GOLD

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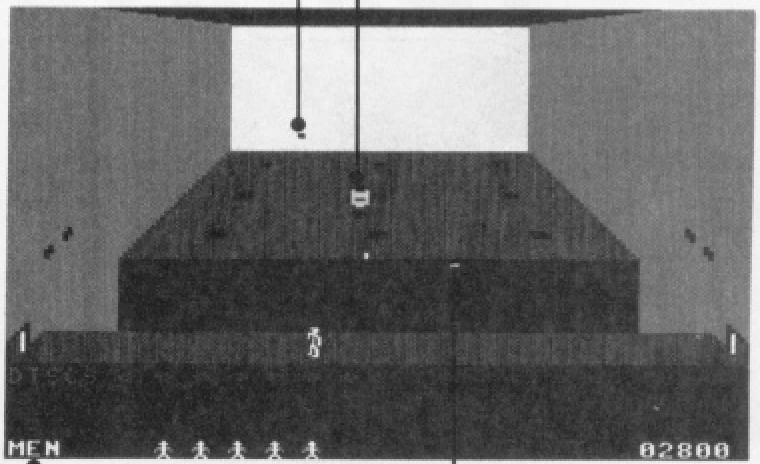
REVIEW COPY OBTAINED FROM:

If we ever get out of this alive, Red 2 ...

Hey, Big Mutha, can you repeat that order, it sounded like you wanted us to fight the robot by throwing discs at it! . . . ssstth, zzztt . . . You heard right, soldier, and when you've sanctioned that thing, get right back here — there's another missile on its way to Seattle!! . . . snap, crackle and pop . . .

To destroy the robot, you have to chuck a frisbee-like disc so that it rebounds off the back wall hitting the robot. The blob on the back wall indicates where you have to throw the disc in order for it to give our robotic friend a pain in the neck.

The robot is always moving — which means it's tricky to hit it, especially on the rebound. Oh yes, the robot also gets to fire at you!



If you miss the robot with your throw, you have to rush along the bottom of the screen to catch the disc on its return journey ... but you've got to be fast!

If you run out of discs or men at this stage of the game, you're in trouble — you won't have time to go through all the stages again in time to stop the missile flattening its first target, Atlanta.

STAGE 6

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GETTING YOUR WORDS WORTH

Even if you write nothing more than the occasional letter, the word processor makes the task quicker, easier and more enjoyable — and the results more impressive. Valerie Buckle *and* Keith Bowden *explain the jargon and compare six packages.*

The Wordprocessor is a piece of software that allows you to enter and edit text, view the results on a monitor or TV screen and print the finished document. It will also format text according to your instructions. Formatting includes processes like justifying the text (straightening the left and right hand edges — like this article), setting the line-spacing, margins and so on.

It will also use a screen editor, that is, it will allow you to enter text in a similar way to the Basic editor on the Commodore 64. The cursor is moved to the point on the screen where you want to enter or edit text, and the delete and insert keys are used in the usual way. All good wordprocessors will scroll the screen backwards (downwards) when the cursor reaches the top of the screen. Some wordprocessors still use 'line editors'. Each line must be isolated and edited separately using a set of predefined instructions. There is no excuse for this on the 64 which has a perfectly good built-in screen editor.

There are two essentially different methods of text formatting known as preformatting and postformatting. Wordprocessors like Easy Script expect the user to type in formatting commands with his/her text. These commands then appear on the screen with the text. The formatting is not carried out until the document is printed. For this reason, there should be an option for viewing the formatted text on the screen before printing so that you can check or correct the formatting. This is known as post formatting.

Vizawrite, conversely, is a preformatter. The text on the screen is formatted as you type it. Formatting commands take effect immediately, so that you immediately see what the printed document will look like. The disadvantage of this method is that the text tends to fly around the screen as you type, which can be rather distracting. If you are typing a word which would take you past the right-hand margin, the whole word will be automatically moved to the beginning of the next line as you type it. This is known as word wrapping.

The first feature I look for in a wordprocessor is the ability to toggle between insert and overtype mode. Normally when characters are typed halfway through an existing paragraph, the existing text will be overwritten. In insert mode the old text will automatically move along to make way for the new, either by opening up a gap or by shunting along in front of the cursor like Easy script. The method used in writing Basic programs — pressing the insert key to open up the space yourself — is unacceptable in a wordprocessor.

Other essential features of a good system are the ability to delete, copy and move blocks of text quickly and easily. The text to be acted on should be highlighted in some way so that the user can see what s/he is about to do — useful to avoid accidentally deleting your latest best-seller. Possible to search the text for a letter, word or phrase and change it to something else throughout the document. This facility is known as multiple search and replace. Some systems allow you to move, copy or delete by word, sentence or paragraph.

Other important features include disk handling. Particularly the ability to link (merge) a series of disk files together and treat them as one. This is unfortunately a rare feature in the systems we looked at. The package should also be able to handle a wide range of printers and interfaces.

None of the systems we looked at allowed 'background' printing of a file while the user carries on working on another one. This omission means that you'll have to wait until you've finished printing before you can carry on using your computer. Extra goodies may include 'mail merge' — a system for automatically addressing the same letter to a number of different people. This is the technique used by companies to send 'personal' form letters.

With these demands in mind, we looked at a number of packages currently available for the 64. The Commodore 64 is ideally suited for use as a wordprocessor because of its full-sized typewriter-quality keyboard. Its control and function keys can also make the wordprocessor commands much easier to use and understand. Sound and colour can also be used to good effect, though not all the wordprocessors reviewed here take advantage of these features as we shall see.

Quick Brown Fox SPT

"Slow Lazy Dog" would be a better name for this package as, in reality, it has none of the qualities conjured up by the first half of this well-known sentence. Rather, it is tiresomely slow to use, awkward to control the operations, and, ultimately, dreary in the extreme.

The review copy came on cartridge packaged in a large box with a comprehensive manual in a large ring binder. Neither QBF nor the manual are designed specifically for the 64, but the package did contain pocket notes with additional tips for the 64. QBF can, however, be used with most printers. The manual itself is a joy to behold, being liberally decorated with screen shots and magnificent cartoons. It is easy to use and contains many sample documents which gradually build up a comprehensive knowledge of QBF. However, many a blemish lies underneath a layer of cosmetics, and it is the program itself which lets this package down.

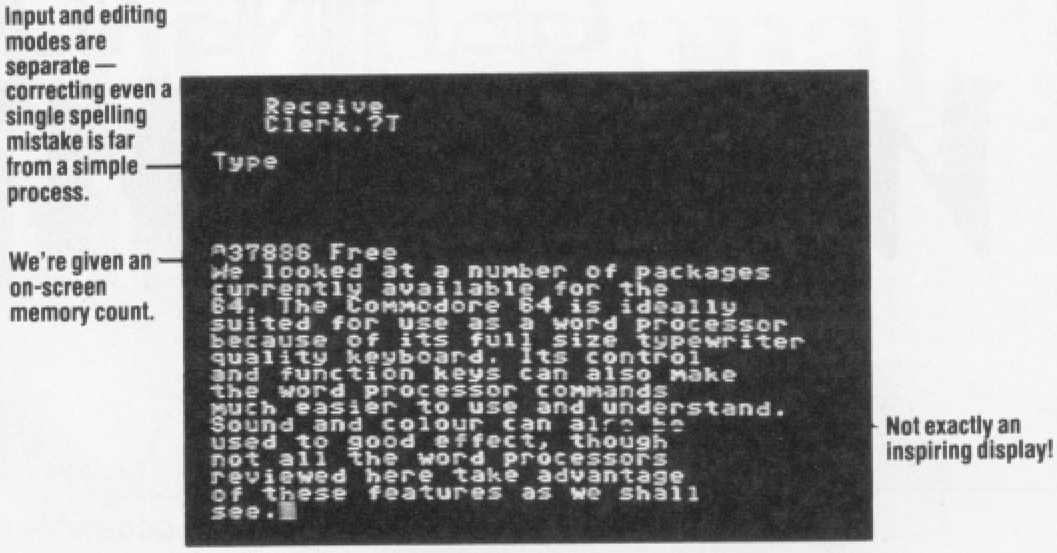
Although it is possible to use QBF for most of the operations you'd want to carry out on a wordprocessor, it's so difficult to use that you'd be better off saving your money. Unlike Easy Script's logical choice of command keys, the keys used in QBF are difficult to remember and the

user is forced to resort to the index for the simplest of tasks.

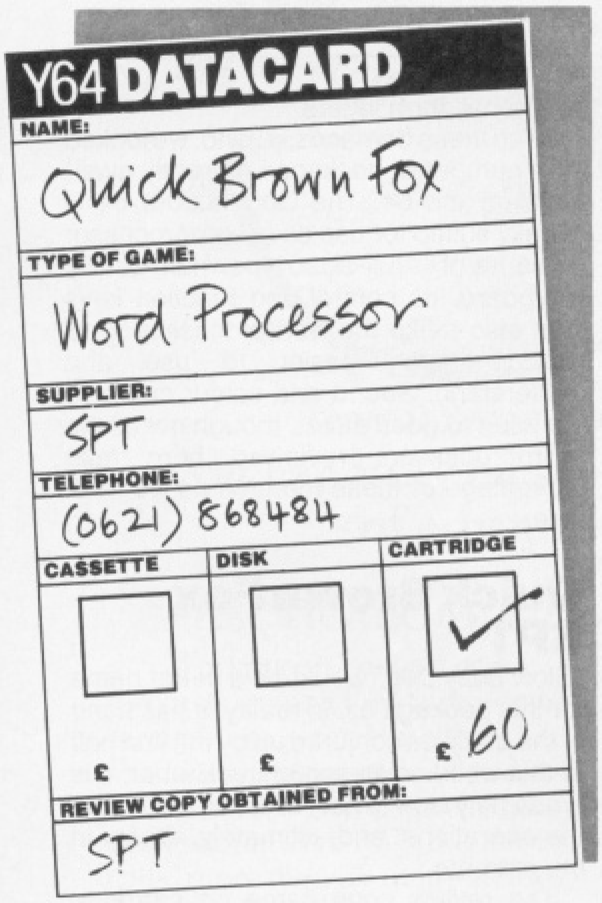
All modes are accessed via the main menu, including text mode for typing. Thus if you decide to insert, delete, or otherwise edit your text, you must return to the main menu, go into a separate edit mode to make the changes via the line editor, then go back to the main menu in order to return to text mode. Confused? Infuriated would be a more apt description, especially for those of us whose typing errors demand constant editing. In short, almost all operations require such long successions of commands that QBF loses all attraction when compared to the other packages reviewed here.

Verdict:
A nifty take-off from the starting block due to fine clothes, but falls flat on its face at the first hurdle.

QUICK BROWN FOX



Quick Brown Fox is extremely powerful, offering most of the facilities you're likely to need, and is supported by an excellent manual. Unfortunately, it's so badly designed and unfriendly that we really can't recommend it.



Easy Script Commodore

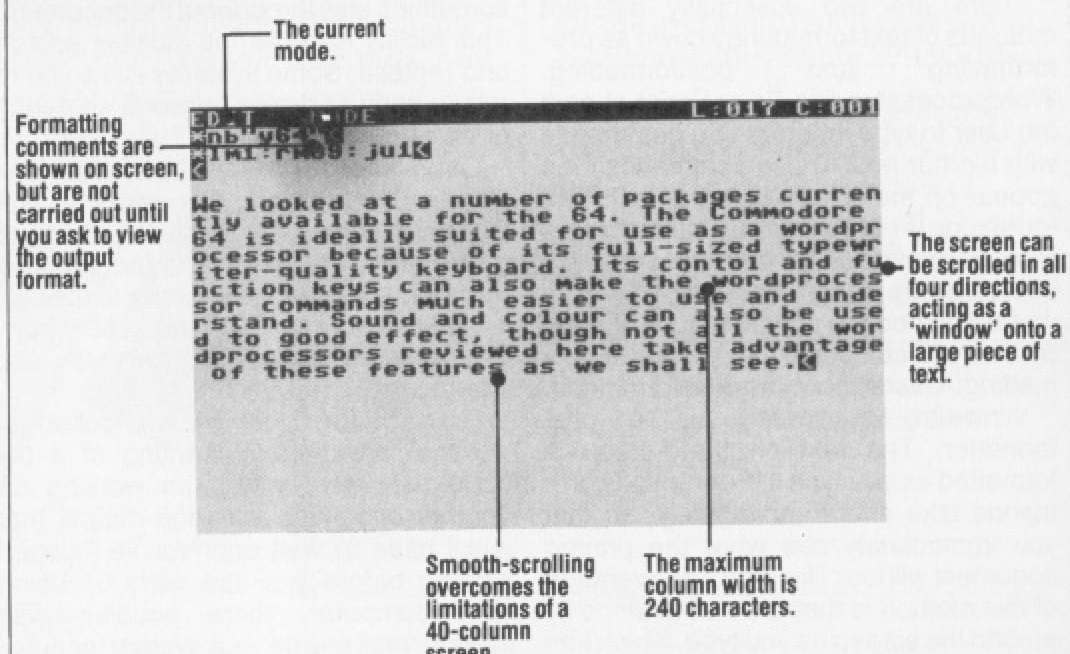
Easy Script is Commodore's wordprocessor, available on disk or cartridge. For a long time the disk version was given away free with the 1541 disk drive, but the retail price is around £75 at the moment. Some dealers still supply the package free when you buy a disk drive, so it's worth shopping around. The whole package is supplied in a presentation box with a manual, crib card and disk or cartridge. The manual is large, well-produced and well-written. It contains full training and reference sections and we have not yet found any mistakes. With the appropriate interfaces, Easy Script can be used with all printers.

Load the program select the column width, disk or cassette and the type of printer used, and you immediately go into type mode to enter your text. Easy Script has a full insert mode so you can go back and insert lines of text at will. Smooth scrolling allows you to overcome the problem of only having a forty column screen, giving you a maximum of 240 columns. On input, Easy Script scrolls beautifully in all four directions. Formatting is not carried out as you type but is performed very quickly when you want to view the result. The output screen can be scrolled left, right and downwards for last-minute checks on format.

The top line of the screen indicates the current mode, column, and line. Mode controls are preceded by a function key and allow sophisticated control of the screen. Format commands include justifications, centring, offsets, pitch, page and numbering. These format commands are interspaced with the source text and indicated by a reverse asterisk in column 1. Almost every command is here, and they are all simple to execute (usually one or two key presses). Special facilities are provided for mail merge, personalised letters and form-filling.

Disk commands are exhaustive, with merge and linking of files, directory file and so on. The ability to link files together is one of the most powerful features of Easy Script, and only exists in a simpler form in one of the other wordprocessors we looked at: the chapter facility in Wordcraft. Each disk file produced by Easy Script can be specifically linked (by name) to any other Easy Script file on the same disk. Thus a series of files can be chained together into one document. As with Wordcraft, each document could occupy a full disk.

EASY SCRIPT



Easy Script has become the standard 64 wordprocessor, partly because it's supplied by Commodore, but mainly because many users get it free with their disk drive. Even if you have to pay the full £75, it's well worth the money.

Chained documents can be printed out without operator intervention in a similar manner to Wordcraft. Easy Script will format the document as if it were all one file with, unless otherwise requested, a new chapter beginning on the same page as the previous one left off. However, linked files are far more powerful than this. Multiple search, and search and replace, commands will treat linked files as though they were a single document in memory, so, for instance, if every file on disk were linked together, it would be possible to substitute the word labour for every occurence of the word Conservative on the disk with one simple command (if only real life were so simple!).

Verdict:
Expensive, but well worth the money if you don't get it free. Easy Script is bug-free and so easy to use that it's truly a joy to discover wordprocessing in such distinguished company.

Y64 DATACARD

NAME: Easy Script

TYPE OF GAME: Word Processor

SUPPLIER: Commodore

TELEPHONE: (01) 930 6711

CASSETTE	DISK	CARTRIDGE
	✓	✓
£	£ 75	£ 75

REVIEW COPY OBTAINED FROM: Commodore

Wordcraft 40 Audiogenic

The most striking feature of Wordcraft 40, apart from the horrific price, is the fact that it is supplied on cartridge, a welcome change as this cuts out the waiting around for the program to load — a tiresome feature of most other packages reviewed here. The documentation takes the form of an adequate ring-bound manual. Once connected, the introductory screen displays a printer menu to configure the package to your system. You need to understand a little about your printer in order to work out which of the several answers to the questions are appropriate. If in doubt, consult your printer manual. Wordcraft 40 works with RS232, Centronics and CBM printers. The function keys are used to choose the options you require, and then a mere press of the bar gives you the command screen.

A useful facility is the RUN/STOP key which toggles between the command and edit modes. Press this key and you can set the limits for the printed output. For example, "L,50" gives you a page length of 50 lines. Information such as page length, width, number and so on are set in the command line above the text screen. This area also houses a useful continuous count of memory and lines typed.

Press the RUN/STOP key and you are in type mode, the text being displayed in black characters on a white screen. These colours may be changed in the usual way using the control key and any number. When you reach the end of the specified page, the screen clears and a new page is started. While typing, Wordcraft 40 will automatically wordwrap (carry the whole word over onto the next line) to avoid the use of hyphens. Instead of using the return key to force a new line or to mark the end of a paragraph, this program uses the f7 key. Getting used to this takes a little time, but is not a major headache.

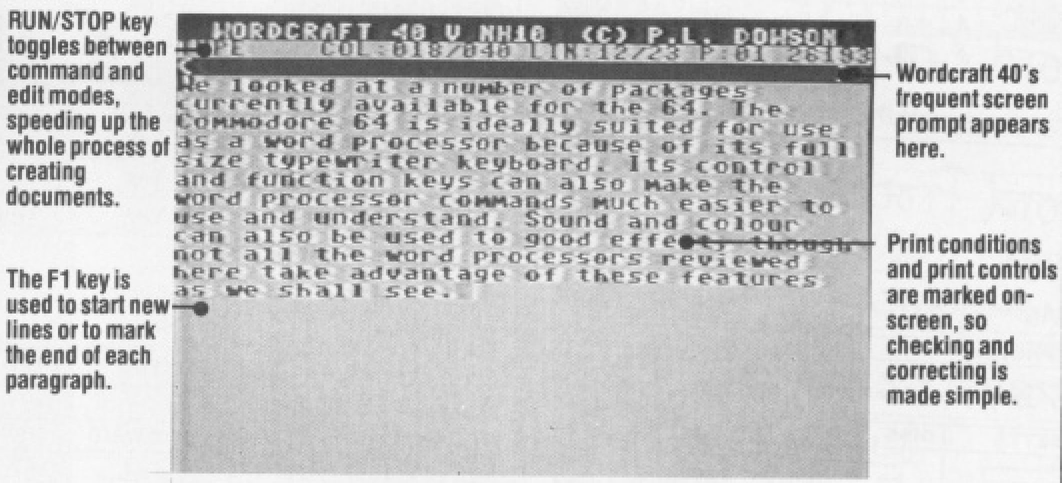
Using the control mode (accessed via the CBM key) you can centre text line-by-line (the result is shown on screen), force new lines and pages, and, if your printer can handle them, use other special features such as underlining and emboldening. These more detailed print functions and print controls are marked on screen by "reversed-out" characters or red squares. Wordcraft 40 has a special 'check' mode which allows you to remind yourself which print functions and print controls you have used in your text. If you decide that you no longer require any of these in your printed document, you are able to remove them by simply pressing the CBM key and "N".

Disk/tape handling is a simple task using, once again, the command mode. A disk can be formatted at any time during a session (essential if you don't have enough disk space to save your document and don't have a formatted disk to hand). Saving text is a simple matter of typing S, and the filename (1-12 characters). There's a useful feature which forces you to specifically replace a document if you wish to save a redraft of a file that already exists. For the more adventurous, there's also an "encryption" facility to lock away the file from prying eyes: before saving, key in "E, codename" RETURN, and your program can now only be retrieved by keying in your special codename.

As you can see from the table, Wordcraft 40 includes most of the major facilities expected of a quality wordprocessor, but there're are few extras worth mentioning. I particularly enjoyed using the prompt facility which instructs the printer to skip over the characters typed in the following line of text. Thus you can send yourself reminders on your monitor or television screen to change the daisy-wheel, put the kettle on, etc, and none of this will be printed.

There's an optional "B"<RETURN> command which causes the screen to emit a "beep" every time you press a key, so allowing you to avoid typing errors caused by failing to fully press a key. The frequent screen prompts also help to cut down on disasters. For example, if you try to erase from memory a document which has not been saved, the message "not saved" will appear on the screen. If you want to insert text, a function to open up a block of underlined spaces 61 characters long. The manual is well written but lacks sample documents. It does, however, included many helpful suggestions for the novice — such as a warning not to insert the cartridge into the computer with the power switched on! My only complaint is

WORDCRAFT 40



Another very powerful package, but extremely expensive. It's very easy to use, though, and has some useful extras. The on-screen prompting is helpful, and the manual is easy to follow. If the price was reduced, it would easily rival Easy Script.

that, for £89.95, Audiogenic should either have produced a better-looking package or cut the price drastically.

Verdict:
Deserves to be complimented on its powerful functions, but Wordcraft 40 may lose out in the end due to overpricing.

STOP PRESS

Audiogenic has just produced a disk based WP package called Micro-Wordcraft which, they tell me, has many commands identical to those in Wordcraft 40. Although I have not yet seen this package, it sounds much better value for money at £24.95. **Y64** hopes to tell you more about Micro-Wordcraft in the near future.

As with QBF, the different modes are accessed via the main menu. These options include, text, print, edit, file load and directory. There is a preset page width of 65 characters per line but this may be altered to between 20 and 80. Unlike the others, Home Office automatically inserts hyphens if the word you are typing is too long for the chosen line width and warns you of this with an audible signal. I was particularly pleased to find that Home Office has an on-screen line counter — a useful guide to the length of a document. Deletion is possible in text mode, but only if you catch the error while still on the same line and are prepared to retype the whole line to correct what may be a single typing error. Otherwise, you must select edit mode from the main menu and use the line editor to delete, insert or change your text. This is not acceptable even in such an inexpensive package; editing line-by-line is an appalling slow and boring process. You must also take care: deletion works instantly, so it's easy to inadvertently lose some text. Another serious complaint is the tendency of this program to crash if you type in commands that it doesn't recognize.

There are, however, several nice touches which prove that the designers really had the user in mind. It's possible to save text in its final form (complete with justification) and when you type END to clear the memory, you'll be reminded to save your file first. Although I won't talk in detail about the database included in the package, it's a well-designed facility

Y64 DATACARD

NAME: Word Craft 40

TYPE OF GAME: Word Processor

SUPPLIER: Audiogenic

TELEPHONE: (0734) 664646

CASSETTE	DISK	CARTRIDGE
£	£	✓ £ 89.95

REVIEW COPY OBTAINED FROM: Audiogenic

Home Office
Audiogenic

Home Office is an inexpensive package which serves as a useful introduction to wordprocessing. Also included in the package is a database. It comes in a small box with a thin but adequate manual, and is available only on cassette. The printers supported by Home Office are the VIC 1515, any CBM serial, and the Epson MX or FX series (and compatibles).

As Home Office is so cheap in comparison to the other wordprocessors reviewed here, it does not have all the facilities which are available on the more expensive packages. However, what it does do, it generally does quite well — though I have severe reservations about its editing facilities. These sometimes appear to ignore the fact that wordprocessing is supposed to make things easier for the user, not more difficult!

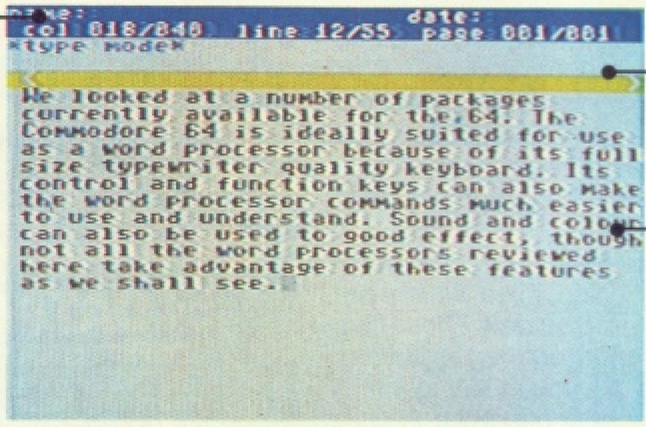
The screen is bordered in orange with black characters on a grey background.

WORDPROCESSORS: THE FEATURES COMPARED

	Easy Script	Vizawrite	Wordcraft	Wordcraft 40	Quick Brown Fox	Home Office
Interfaces supported						
RS232	Yes		Yes	Yes	Yes	
Centronics	Yes	Yes	Yes	Yes	Yes	Yes
Serial Bus	Yes	Yes	Yes	Yes	Yes	Yes
Basic Editing Features						
Editor	Screen	Screen	Screen	Screen	Line	Line
Formatting	Post	Pre	Pre	Pre	Post	Post
Insert mode	Yes	Yes	Yes	Yes	Yes	Yes
Delete Forwards/ Backwards	Backward	Forward	Both	Backward	Forward	
No of 40 col lines	764	875	286	665	947	563
Linked files	Yes	Yes	Yes			
Word count						
Column manipulation		Yes	Yes			
Highlighting on						
Delete	Yes	Yes	Yes	Yes		
Transfer	Yes	Yes		Yes		
Sophisticated Features						
Smooth scrolling	Yes	Poor	Poor	Yes		
Word wrapping		Yes	Yes	Yes		
> 40 cols	Yes	Yes	Yes	Yes		Yes
Spelling check	Optional	Optional				
Mail merge	Yes	Yes	Yes	Yes	Yes	
Sorting						Yes
Background print						
Row/Column indicators	Yes	Yes	Yes	Yes		Yes
Formatting Features						
Headers	Yes	Yes	Yes	Yes	Yes	
Footers	Yes	Yes	Yes	Yes		
Tabs	Yes	Yes	Yes	Yes	Yes	Yes
Margins	Yes	Yes	Yes	Yes	Yes	Yes
Automatic paging	Yes		Yes	Yes	Yes	Yes
Page numbering	Yes	Yes	Yes		Yes	
Disk features						
Formatting	Yes	Yes	Yes	Yes		
Copy disk		Yes				
Erase file	Yes	Yes	Yes		Yes	
Merge files	Yes	Yes	Yes	Yes	Yes	Yes
Rename file	Yes	Yes	Yes	Yes		

HOME OFFICE

Home Office may be the cheapest package, but it gives you more information than any of the others. (The database is an optional extra.)



Tab settings appear on this format line.

Bordered in orange, with black characters on grey background, Home Office is cheap and cheerful.

Home Office can't be expected to rival packages costing up to ten times the price, but it is a perfectly adequate introduction to wordprocessing. It is not suitable for serious work, though.

which allows you to store and retrieve data easily, and sort it in alphabetical order if required. Many users will find this a useful way of storing telephone numbers, addresses and so on.

Verdict:
Home Office is a simple package which will serve its purpose if you haven't much money to spend, although it has none of the sophisticated facilities of the up-market wordprocessors. I found the line editor a pain in the neck. It's also dubious whether anyone would pay upwards of £200 for a printer, and then have all the joy taken out of wordprocessing by using a £9 wordprocessor. Much as I applaud the efforts of Audiogenic in bringing out a cheap wordprocessor, this package makes simple tasks difficult and I cannot help but feel that it will fall by the wayside.

	Easy Script	Vizawrite	Wordcraft	Wordcraft 40	Quick Brown Fox	Home Office
Directory	Yes	Yes	Yes	Yes	Yes	Yes
Cassette	Yes	Yes		Yes	Yes	Yes
Other WP formats		Yes	Yes			
Editing Features						
Search	Yes	Yes	Yes	Yes	Yes	
Search again	Yes	Yes			Yes	
Wildcards						
Search and Replace	Yes	Yes	Yes	Yes	Yes	
Multiple S and R	Yes	Yes	Yes	Yes		
Global S and R	Yes					
Block copy	Yes	Yes	Yes	Yes	Yes	
Block move	Yes	Yes	Yes	Yes	Yes	
Block delete	Yes	Yes	Yes	Yes	Yes	
Editing/Move cursor by						
Character	Yes	Yes	Yes	Yes	Yes	Yes
Word					Yes	Yes
Sentence						
Page		Yes	Yes	Yes		
Line	Yes	Yes	Yes	Yes	Yes	
Screen						
Editing/Delete by						
Character	Yes	Yes	Yes	Yes	Yes	Yes
Word			Yes	Yes	Yes	
Sentence					Yes	
Paragraph					Yes	
Page		Yes				
Line	Yes	Yes	Yes	Yes		Yes
Screen						
Formatting						
Centre text	Yes	Yes	Yes	Yes	Yes	Yes
Right adjust	Yes	Yes	Yes	Yes	Yes	Yes
Left adjust	Yes	Yes	Yes	Yes	Yes	Yes
Full adjust	Yes	Yes	Yes	Yes	Yes	Yes
Printer						
Underlining	Yes	Yes	Yes	Yes	Yes	Yes
Emboldening	Yes	Yes	Yes	Yes	Yes	Yes
Line Spacing	Yes	Yes	Yes	Yes	Yes	
Single Sheet	Yes	Yes	Yes	Yes	Yes	
Pause	Yes	Yes	Yes	Yes	Yes	

Y64 DATACARD

NAME: Home Office

TYPE OF GAME: Word Processor

SUPPLIER: Audiogenic

TELEPHONE: (0734) 664646

CASSETTE	DISK	CARTRIDGE
✓ £ 9	£	£

REVIEW COPY OBTAINED FROM: Audiogenic

Dataview Wordcraft

The next package to be looked at in this review of wordprocessors for the 64 seemed, at the first encounter, to be the best. Wordcraft is not related to Wordcraft 40, despite the similarity in name. Disk-based, with a concise manual, this package has many of the facilities lacking in the other, but there are several serious bugs which may put off prospective users. Once the program has loaded, the screen clears to list the printer you may use. Choose the appropriate one with the press of key, and the printer file loads. Wordcraft supports a wide range of printers from the inexpensive CBM 1525 to those more suited to the professional.

The text screen is brightly coloured with a green border, white screen and black characters — with a dash of purple and yellow for good measure! The colours may be changed using the function keys

although the background and character colours are fixed. As in Wordcraft 40, the RUN/STOP key toggles between the type and command modes. Using command more you are able to set up the format of your document and this, along with the name, data, page and chapter appears on the top five lines of each page. Typing and editing are fairly straightforward, the CBM keys being used to enter editing controls. There are a large number of facilities available for moving the cursor around the text and screen (if you can remember them). I also liked the speed of the multiple search and replace feature, but it would have been nice if there had been a global search and replace facility as well. All editing controls may be checked using the CBM key and "c" and then deleted before printing as required.

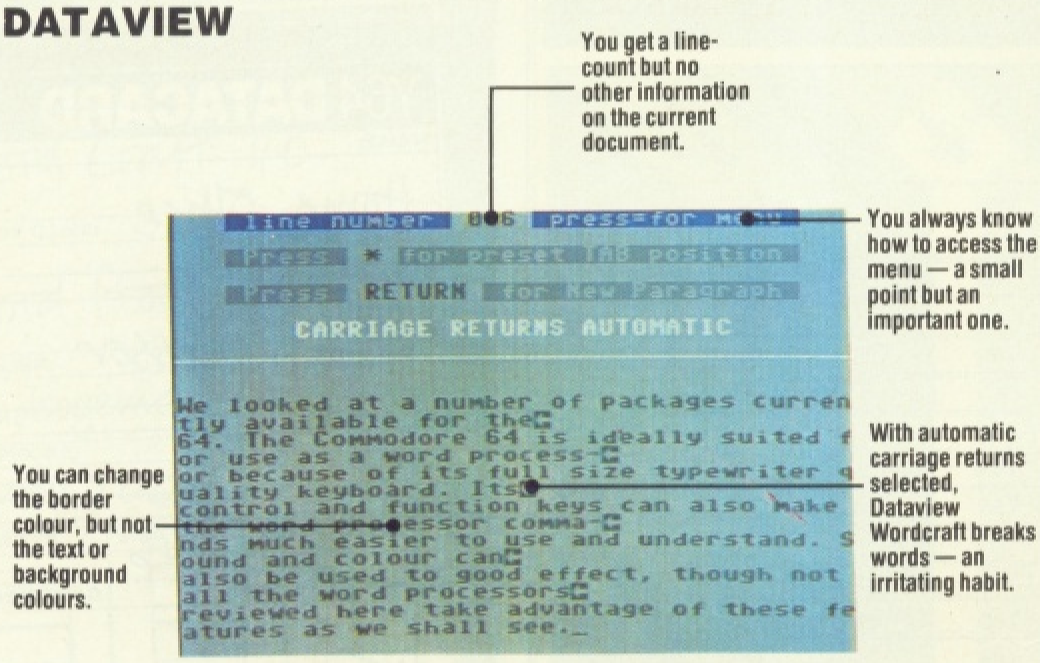
The Wordcraft ruler appears at the top of the screen as a darker coloured line indicating the current position of the margins and tabs. Accessed via the CBM and "#", the ruler allows you to set tabs and margins and then change their position without retyping. It took me some time to get to grips with the versatility of the ruler as it is not all explained in the manual, but I appreciated the quick response in manipulating tabbed columns of text of some size (in a similar manner to the format line in Vizawrite). Unlike Vizawrite, Wordcraft does not require a character space for the tab character but highlights the first letter following the tab.

Disk handling is easy and there are several extra commands which widen the range of uses of Wordcraft. An important feature of Wordcraft is its ability to treat chapters of a document as separate named and numbered disk files. Inserting a chapter between other chapters of an existing document will result in the renumbering of the other pages and chapters. The real beauty of this is that Wordcraft will print out the whole document without the user loading each section manually. Wordcraft will load Chapter 1 of a specified document, print it out, automatically load chapter 2, print that, and so on, thus a single document could have over 170,000 characters (25-30000 words). The manual boasts that Wordcraft allows you to produce back-up disks and copy files but this is only possible on double drive systems, and so would not apply to most users.

Printing is made easy by the large number of Print Definition Files which are supplied in the Wordcraft disk. These files define the commands required by individual printers and all you have to do is choose the file for your particular printer. Thus, with more advanced printers, facilities such as proportional spacing are immediately available. If you're feeling more adventurous, you may choose to edit a pre-defined printer file or create your own in order to utilise the special functions of a non-standard printer. This is a facility which, among the wordprocessors reviewed here, is unique to Wordcraft, and makes this a very versatile package.

As the table shows, Wordcraft is a very powerful wordprocessor with many facilities to commend it. However, I have some important criticisms to make regarding its tendency to lock out. I was astounded to see that, in addition to the "File not found" message, the program crashed if an incorrect "Get" command was entered. This also happened with a correct command! In fact, I got utterly sick of re-loading Wordcraft after its repeated locking out until I eventually discovered that pressing the space bar sometimes recovered the program. There is also an irritating inconsistency which spoils an otherwise useful help facility. Apart from the fact that the manual explains everything (although it may be out of reach and is pretty dreadful anyway), you are informed that you must press the return key to leave Help but all this does is reload page one of ... yes, Help. (The correct key to press is Run/Stop).

DATAVIEW



Dataview Wordcraft is pleasant to use and offers a good range of facilities, but suffers from several serious bugs. We can't recommend it until these are fixed.

Verdict:
A very compatible package which will, no doubt, appeal to the more experienced user. It needs debugging, however, before it can be fully recommended.

Y64 DATACARD

NAME: Dataview Wordcraft

TYPE OF GAME: Word Processor

SUPPLIER: Dataview Wordcraft

TELEPHONE: 0206 869414

CASSETTE	DISK	CARTRIDGE
☐	☑	☐
£	£ 49.95	£

REVIEW COPY OBTAINED FROM:

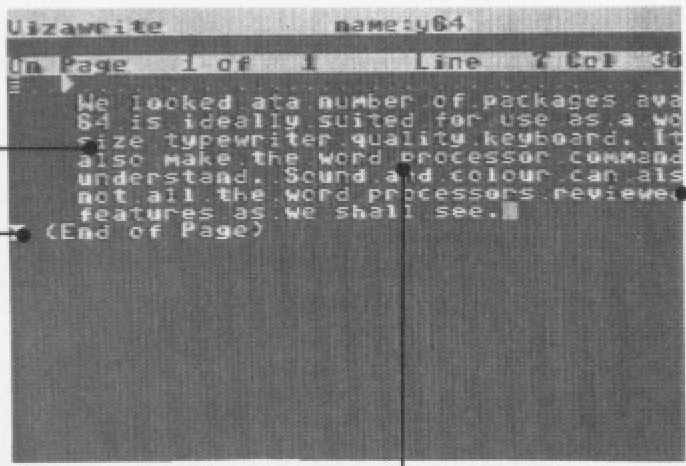
Vizawrite
Viza Soft

Vizawrite is Viza Software's disk based wordprocessor for the Commodore 64. It's available from a number of sources, but this review copy came from Viza, whose deal included a copy of the Vizaspell spe[illegible]g checker for an inclusive price of £1[illegible]

Easy Script and Vizawrite are of a very similar standard, with one major difference — Vizawrite has on-screen formatting. That is, commands such as centering a heading are carried out as you type them. (Formatting with Easy Script involves processing the input file it has been typed in). However, Viza has cheated slightly as right justification is not carried out until the final printout, though it must be said that this reduces the amount of on-screen shifting that goes on as you type. The most useful application of on-screen formatting is undoubtedly the manipulation of columns, and Vizawrite is wonderful for designing tables. Vizawrite supplies an unlimited number of 'formatting lines' which can be spread throughout your work. These lines may include tab symbols. If, after the table is completed, all you have to do is insert a couple of spaces in the appropriate place on the format line and the whole table spaces out

VISAWRITE

Visawrite is the only package to support on-screen formatting, though right-justification is not shown on screen.



The text disappears off the edge of the screen on wider column settings. The text scrolls automatically as the cursor reaches the right-hand side of the screen.

End of page markers have to be manually inserted by the user, though you have a line counter to help.

Mistakes can easily be corrected, using the full-screen editor.

Vizawrite is an excellent "package" let down by a few minor problems and one serious one. It is, however, highly recommended for creating and editing tables.

before your eyes!

Use of the wordprocessor is fairly standard. Full screen editing, full cursor control and four-directional scrolling are provided, though reverse scrolling is a little jumpy. Only a couple of oddities — 'delete' deletes forwards, which takes a bit of getting used to, and the cursor characters are produced by first pressing CONTROL and then the appropriate key, rather than both together. There is no automatic paging facility — the user has to decide where the end of each page should be.

All commands are initiated with the control (or Commodore) key. Again, these are standard — copy text, move text, disk commands, search, goto page, merge documents, global edit, automatic page numbering, and so on. Full mail-merge facilities are available.

Special printer information and 'srcatchpad' pages are associated with, and automatically saved with, each document. These printer type, lines-per-inch, justification required and even document colour. Compatible printers are CBM, VIC, Epson, Qume, Diablo, Spinwriter, Triumph Adler and Ricoh Flowriter and there are options for most special features. Compatible interfaces are IEEE and Centronics parallel. Vizawrite does not appear to support RS232 via the user port.

Vizawrite comes with an adequate 70-page A4 manual, and Viza will supply a backup copy of the disk for £6. Also included is an excellent disk backup utility (it won't, however, copy Vizawrite!) and a program for driving a Centronics parallel interface from Basic.

Vizaspell came on the same disk, but can be backed up. It consists of a 30,000 word English language dictionary and associated spelling checker.

So, at first sight Vizawrite appears to be an excellent piece of software. However, there are two major reasons why I would not recommend this package. Firstly the lack of both an automatic paging facility and a full file linking mechanism makes the production of long documents tedious beyond belief. Forced pages must be inserted by hand throughout a document. This can take a fair while and is an error-prone process. If it's then necessary to add a piece of text near the beginning of the document, all the paging is messed up. You then have to go through the document deleting all the forced pages ... then again inserting a new lot. This is made all the more mind destroying by the fact that the system slows down so much when editing text near the bottom of a long document. The lack of a full file linking mechanism means that each new file must start on a new page (without a great deal of effort) and that any new attempt to continue page numbering from a previous file is subject to all the problems just described.

My second gripe is that Vizawrite does not protect itself from the well known bug in the 1540/1 disk drive. This means that any attempt to save a long file to a disk that is almost full is likely to result in corruption of the whole disk! This has now happened to me so many times that I now only ever use my copy of Vizawrite for producing tables, at which it is very good. To anyone using Vizawrite regularly I suggest that they make sure that they never allow their disks to fill up. To be safe I would use a new disk for every file! This does not occur with Easy Script (Commodore is obviously aware of its own bugs), and I have not experienced it with any of the other systems reviewed here.

Verdict:

Vizawrite would be a superb package if the bugs were ironed out and automatic paging and file linking were added. As it is, Vizawrite cannot really be recommended.

Y64 DATACARD

NAME: Vizawrite

TYPE OF GAME: Word Processor

SUPPLIER: Vizasoft

TELEPHONE: 0634 813780

CASSETTE	DISK	CARTRIDGE
☐	☑	☐
£	£ 70	£

REVIEW COPY OBTAINED FROM: Vizasoft

WORDPROCESSORS SCORE CHART

	Easy Script	Vizawrite	Wordcraft	Wordcraft 40	Quick Brown Fox	Home Office
Facilities etc.	7	7	6	7	7	3
Usability	8	10	5	7	0	3
Reliability	10	2	6	8	8	6
Average	8	6	6	7	4	4

BEST OF THE REST

Of course, we couldn't review all the wordprocessors in this much detail — there are just too many of them! Other titles worth checking out before you make that all-important decision are: *Word Pro* — £9.95, US Gold (Tel. 021-359 3020); *Micro Wordcraft* — £24.95, Audiogenic (Tel. 0734 664646); *Paperclip* — £74.95, Batteries Inc; *Word Processing* — £61.95, Total Inc.; *Hes Writer* — £29.95, Hes; *Wordwise* — £49.95, Hesware; and *Tex Plus* — Impacs.

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Just fill in the form below using CAPITAL LETTERS and restrict yourself to a maximum of 30 words per entry (including name, address/phone number). Use a photocopy if you want to keep the magazine intact. Coupons that don't meet the requirements will not be printed.

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Address ....

....

.... Postcode ....

I would like the ad to appear under the following category/ies:

(Please tick) ☐ HARDWARE ☐ SOFTWARE SWAPS ☐ WANTED ☐ CLUBS & EVENTS ☐ MESSAGES

MESSAGES

• CBM 64 printouts, listings for 99p. Screen dumps for 70p. Ideal for sending to magazines. Send tapes, any extra instructions and cheques, etc, to Mr. D Talbot, 11, Broadgate, Darwen, Lancs.

HARDWARE

• Wanted Speech Synth for Vic 20. Around £20. Urgently. Michael Croft, 33, Kirkes Road, Moorlands, Lancaster LA1 3DW.

• CBM printer for sale, VGC. Includes box, manual, spare ribbon, paper, labels. £100 + p.p. Tel: Stevenage (0438) 811634 after 7 pm. DP Goodmand, 17, Hampton Close, Stevenage, Herts. SG2 8SP.

• Commodore-compatible data recorder. Saves and loads without problems. £20 ono. Also compatible with various other machines ZX81 Spectrum etc. Phone after 6 pm: (0930) 61320. G. Stepehenson, 25, Willow Garth, Scarborough. N. Yorks. YO12 5HZ.

WANTED

• Someone to write to and swap programs with. Note that I am not an experienced games programmer. Write to: Cheryl Monks, 12, Morval Crescent, Walton L4 5RF.

• Simon's Basic users. Let's share our own programs. I want to set upa swap library. Send tapes and sae for details. Brian Taylor, 8, Coniston Way, Woodlesford, Leeds LS26 8RR Tel: 821088.

• User group starting for CBM64 owners. Large software library. Useful info and tips exchanged. Details from: Tim Walsh, St. John's, Wilton Ave., Bishopstown, Cork, Ireland.

CLUBS AND EVENTS

• Join the Micro operators Bureau. Super discounts on software, free club magazine and meetings. Send sae for details. J P Horn, 40, Jervis Close, Cinnamon Brow, Warrington WA2 0BS.

• Kimberly Clark Computer Club — new in Prudhoe. We cover all machines and have applied for affiliation to the Association of Computer Clubs and to ICPUG. Anyone interested can contact me: J R Christer, 16, Redwell Road, Oaklands Estate, Prudhoe, Northumberland, NE42 5AP. Tel: 35507.

• The South Tyneside Mega Electronic Games Machine Association welcome new members. Contact David Carter on Newcastle 273 8811. 28, Westoe Drive, South Shields, Tyne and Wear.

SOFTWARE SWAPS

• CBM software to swap. Many American titles such as Cohen's Tower's, contact, S.B.C. Send list for a copy of my list. Disk only answered. Declan Flynn, 12, Haroldsway, Stamford Bridge, York, YO4 1DW.

• CBM software for sale. 14 original tapes, 3 cartridges and 4 books. Cost £170. Sell for £110 ono. Tel: Jason (0790) 53161, after 4 pm. J Hatterll, Welham House, Hundleby Road, Spilsby, Lincs. PE23 5LP.

• VIC 20 intro to basic. Two volumes boxed with tapes. Database or wordprocessor tapes wanted. Already have audiogenic home offices. Tel: (0908) 566087. John M Powell, 14, Gorricks, Stony Stratford, Bucks MK11 1HB.

• Hypersaved CBM 64 software for exchange. Also tips and ideas. Interested hypersavers contact George. Tel: Notts. 2088431. G. Carter, 27, Parry Way, Arnold, Nottingham NG5 8DD.

• Le Mans, Who Dares, Wimbledon, Jupiter Lander to swap. Offers to Steve Aldreidge, 53, Crown Road, Clacton, Essex CO15 1AU.

• Swap all leading and previous software titles for CBM 64. Titles include Monty Mole, System 15000, Beach Head, Falcon Patrol II and many more. Write to Nigel Sheffield, 12 Holmesfield Walk, Mansfield, Notts NG18 3QG.

• Swap BMX Racers for Daredevil Dennis or Cuthbert in Space, or Hunchback Two. Tel: Skipton 2410 James Miller, The Newlands, Skipton Emblay, Nr. Yorks.

• Will swap Hover Bovver, Vegas Jackpot, Space Walk, BMX Racers, Bon 20, Election Game for Synthy 64. Write to Leo Staggs, 71, Maxwell Gardens, Orpington, Kent BR6 9QT.

• 64 user has many American programs to swap — not all on the market. Games, utilities, business, educational, public domain. Send SAE for list. R. Parry, Little Manor, Haversham, Milton Keynes, MK1 G7DT.

• CBM 64 — titles include sentinel, Tapper, R.O. Moscow, Ghostbusters, Gyruss, etc. Send list or Tel: (091) 2532899 Mark James, 3, Craster Close, Whitley Bay, Tyne and Wear.

• Wanted: Valhalla, Internatioal Football, Blue Max. Have many games to swap including Forbidden Forest, Hunchback, Motor Mania, Caverns, Khafka, Super Pipeline, Attack of Mutant Camels, Radar Rat Race, Decathlon. Tel: (0793) 823806. Mr B D Pittuck, 34, Birchwood Road, Stratton St., Margaret, Swindon SW3 4JR.

• CBM 64 — titles. Many American, over 220 games. Disk only please to: Ronje Kalirai, 123, Nothumberland Road, Northam, Southampton, Hampshire.

• CBM 64 user will reply to all letters. More than one of each title available to swap. Send list to, Stanley Levitt, 3, Waverly Road, Savoy Road, Savoy, Johannnesburg, 2192, South Africa.

• Swap The Hobbit (with book) or Colossal Adventure for Sherlock or Valhalla (originals only please). Write to David Rawlinson, 37, Campions Close, Bolton-on-Dearne, Rotherham, South Yorkshire S63 8BT.

• Swap Hobbit for Valhalla or any Level 9 adventure. Write to Mike Marsden, Bedales School, Petersfield, Hants, GU32 2DG.

• Exchange Level 9 adventure Quest for Dungeon adventure or snowball. Ring Barry Southey on 01-805 1247 after 7 pm.

• CBM 64 disk software to swap including many American titles. Send lists to David c/o 10 Appian Place, Gateshead, Tyne & Wear, NU9 5QB. Tel Tyneside 4143120 after 6 pm.

• Swap Crazy Kong, Pakacuda and Escape MCP for any adventure game. Contact M. Wasteney, 2 The Lawns, Wootton Hall, Wootton Wawen,

• American Software to swap e.g. Mule, Pinball, Construction Set, Popeye, All the Zorks: Send list to: R. Kalirai, 123, Northumberland Rd., Northam, Southampton SO2 1LR.

• Swap Cosmic Split and Krystals of Zong for Aztec Challenge. Write to: Chris Barnes, 19, Scafell Way, Clifton, Notts.

• Games to swap including Hobbit, Sherlock Homes, Beach Head, Valhalla, Bridge Master and Midway. Contact: Graham Daly, 157, Radcliffe Way, Northolt, Middlesex UB5 6HJ.

• Potty Pigeon, Beach Head, Arabian Nights, Daley's Decathlon, Twin Kingdom Valley to swap. Write to: Andrew Houston, 10, Howburn Place, Aberdeen AB1 2XX. Phone 0224 582164 after 6.

• I want to exchange all types of software. I have a big list of programs and games. Send your list to Juan Morales, C/ Gordon 18-8-B, Malaga, Spain.

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SCRATCHPAD

In this month's Scratchpad *we provide the final three demonstration programs for* Brian Rushby's *windowing routine, and* Mike Hart *presents an extremely handy routine for plotting in medium resolution!*

UP SCROLL

```
50 A$="1234567890123456789012345678901234567890█"
60 B$="0         1         2         3
        4"
70 C$="████████████████████████████████████████
███████"
75 D$="████████████████████████"
```

Lines 50-75 Defines variables used to PRINT margin scaling.

```
80 POKE53280,14:POKE53281,6
```

Line 80 Sets border and screen colours.

```
90 PRINT"██"
95 PRINTA$+B$
```

Lines 90-95 Clears screen and PRINTs scales.

```
100 INPUT"██████INPUT RIGHT MARGIN 1-41
   █████";R
105 IFR<1THENPRINT"██████████NO SCROLL ?█
          ":GOTO100
107 IFR>41THENPRINT"██████████SCREEN MARG
IN=41 MAX█":GOTO100
108 IFR=41THENPRINT"████";LEFT$(C$,39);"
█>█":GOTO110
109 PRINT"████";LEFT$(C$,R-1);"█↑█"
110 INPUT"████████INPUT LEFT  MARGIN 0-3
9    █████";L
115 IFL>39THENPRINT"████████████NO SCROLL
 ?█          ":GOTO110
117 IFL<0THENPRINT"████████████SCREEN WID
TH =0 MIN█":GOTO110
118 IFL=0THENPRINT"█████K█":GOTO125
119 PRINT"████";LEFT$(C$,L-1);"█↑█"
125 PRINT"███████████
"
130 PRINT"████████████████████████ PRESS
ANY KEY TO CONTINUE "
140 R=R-1:DI=R-L:IFDI<1THENPRINT"███SCRO
LL WIDTH LESS THAN 1 RE-RUN█":END
145 GET K$:IFK$=""THEN145
```

Lines 100-145 Inputs margin positions (see below).

```
160 POKE53244,L:POKE53243,DI:POKE53242,4
0-DI
```

Line 160 Passes margin parameters to machine code.

```
180 POKE53265,PEEK(53265)AND247
```

Line 180 Sets screen to 24 row mode.

```
190 POKE53265,(PEEK(53265)AND248)+7
```

Line 190 Sets scrolling register to a maximum.

```
200 PRINT"█";LEFT$(D$,24)+A$
```

Line 200 Clears screen and PRINTs scaling.

```
260 FORI=LTOR-1:POKEI+1984,32:NEXT
```

Line 260 Clears area where new DATA is to be placed.

```
275 X=RND(1)*(R-L)+L+1984
```

Line 275 Calculates random position for graphic.

```
280 IFRND(1)<0.5THENPOKEX,42:POKEX+54272
,1
```

Line 280 POKEs graphics character into scroll.

```
285 SYS49232
```

Line 285 GOSUBs machine code scrolling routine.

```
300 GOTO260
```

Line 300 Continues in a loop.

Now load and run as above, and determine the correct margins required. To use these setting in your own program.

1 Find the values of the variables used in line 160. Use the values in your program instead of the variables.
2 Set the screen to 24 row mode.
3 Set the scrolling register to the maximum.
4 Clear the area for new data.
5 Introduce the new data.
6 SYS 49232.

When scrolling up, data must be POKEd or PRINTed at the bottom of the screen. You must ensure, if PRINTing, that a carriage return is not executed with the cursor on the bottom line, otherwise you'll get a standard scroll.

LEFT SCROLL

```
50 A$=" 1██2██3██4██5██6██7██8██9███10██
1██2██3██4██5██6██7██8██9███20"
60 B$="██1██2██3██4██5█"
70 C$="██████████████████████████"
```

Lines 50-70 Defines variables used to PRINT margin scaling.

```
80 POKE53280,14:POKE53281,6
```

Line 80 Sets border and screen colours.

```
90 PRINT"██"
95 PRINTA$+B$
```

Lines 90-95 Clears screen and PRINTs scales.

```
100 INPUT"██████████INPUT TOP MARGIN 0-2
4    █████";T
105 IFT<0THENPRINT"█████████████NO SCROL
L ?█          ":GOTO100
107 IFT>24THENPRINT"█████████████NO SCRO
LL ?█":GOTO100
108 IFT=0THENPRINT"███";"█↑█":GOTO110
109 PRINTLEFT$(C$,T);"███<█"
110 INPUT"█████████████INPUT BOTTOM  MARG
IN 1-26     █████";B
115 IFB>26THENPRINT"███████████████NO SC
ROLL ?█        ":GOTO110
117 IFB<1THENPRINT"████████████████NO SCR
OLL ?█":GOTO110
118 IFB=26THENPRINTC$+"███V██":GOTO125
119 PRINTLEFT$(C$,B);"███<██"
125 PRINT"███████████████
"
```

SCRATCHPAD

```
130 PRINT"■■■■■■■■■■■■■■■■■■■■■■■■ PRESS
ANY KEY TO CONTINUE "
140 DI=B-T:IFDI<1THENPRINT"■■■SCROLL WID
TH LESS THAN 1 RE-RUN■":END
145 GET K$:IFK$=""THEN145
```

Lines 100-145 Inputs margin positions (see below).

```
155 TM=1023+40*T:TH=INT(TM/256):TL=TM-(T
H*256)
```

Line 155 Calculates parameters from input DATA.

```
180 POKE53270,PEEK(53270)AND247
```

Line 180 Sets screen to 38 column mode.

```
190 POKE53270,(PEEK(53270)AND248)+7
```

Line 190 Sets scrolling register to a maximum.

```
200 PRINT"■"SPC(36);A$+B$
```

Line 200 Clears screen and PRINTs scaling.

```
230 POKE53241,TL:POKE53240,TH:POKE53239,
212+TH:POKE53235,DI-1
```

Line 230 Passes margin parameters to machine code.

```
260 FORI=TM+40TOTM+(40*DI)STEP40:POKEI,3
2:NEXT
```

Line 260 Clears area where new DATA is to be placed.

```
275 X=INT(RND(1)*(B-T-1)+T)*40+1063
```

Line 275 Calculates random position for graphic.

```
280 IFRND(1)<0.5THENPOKEX,42:POKEX+54272
,1
```

Line 280 POKEs graphics character into scroll.

```
290 SYS49319
```

Line 290 GOSUBs machine code scrolling routine.

```
300 GOTO260
```

Line 300 Continues in a loop.

Now load and run as above to determine the correct margins you desire. Use as follow:

1 Find the values of the variables used in line 230. Use these values in your own POKE statement line.
2 Set the scroll to 38 column mode.
3 Set the scrolling register to the maximum.
4 Clear the area for new data.
5 Introduce the new data.
5 SYS 49319.

Be careful of cursor wraparound when PRINTing to the right hand side of the screen.

RIGHT SCROLL

```
50 A$=" 1■■2■■3■■4■■5■■6■■7■■8■■9■■10■■
1■■2■■3■■4■■5■■6■■7■■8■■9■■20"
60 B$="■■1■■2■■3■■4■■5■"
70 C$="■■■■■■■■■■■■■■■■■■■■■■■■■■"
```

Lines 50-70 Defines variables used to PRINT margin scaling.

```
80 POKE53280,14:POKE53281,6
```

Line 80 Sets border and screen colours.

```
90 PRINT"■■"
95 PRINTA$+B$
```

Lines 90-95 Clears screen and PRINTs scales.

```
100 INPUT"■■■■■■■■■■INPUT TOP MARGIN 0-2
4     ■■■■";T
105 IFT<0THENPRINT"■■■■■■■■■■■■NO SCROL
L ?■             ":GOTO100
107 IFT>24THENPRINT"■■■■■■■■■■■■NO SCRO
LL ?■":GOTO100
108 IFT=0THENPRINT"■■■";"■↑■":GOTO110
109 PRINTLEFT$(C$,T);"■■■<■"
110 INPUT"■■■■■■■■■■■INPUT BOTTOM  MARG
IN 1-26      ■■■■";B
115 IFB>26THENPRINT"■■■■■■■■■■■■■■NO SC
ROLL ?■             ":GOTO110
117 IFB<1THENPRINT"■■■■■■■■■■■■■■NO SCR
OLL ?■":GOTO110
118 IFB=26THENPRINTC$+"■■■V■■":GOTO125
119 PRINTLEFT$(C$,B);"■■■<■■"
125 PRINT"■■■■■■■■■■■■■■
"
130 PRINT"■■■■■■■■■■■■■■■■■■■■■■■■ PRESS
ANY KEY TO CONTINUE "
140 DI=B-T:IFDI<1THENPRINT"■■■SCROLL WID
TH LESS THAN 1 RE-RUN■":END
145 GET K$:IFK$=""THEN145
```

Lines 100-145 Inputs margins positions (see below).

```
155 TM=1063+40*T:TH=INT(TM/256):TL=TM-(T
H*256)
```

Line 155 Calculates parameters from input DATA.

```
180 POKE53270,PEEK(53270)AND247
```

Line 180 Sets screen to 38 column mode.

```
190 POKE53270,(PEEK(53270)AND248)
```

Line 190 Sets scrolling register to a minimum.

```
200 PRINT"■■";A$+B$
```

Line 200 Clears screen and PRINTs scaling.

```
230 POKE53233,TL:POKE53232,TH:POKE53231,
212+TH:POKE53227,DI-1
```

Line 230 Passes margin parameters to machine code.

```
260 FORI=TM-39TOTM+(40*DI)-39STEP40:POKE
I,32:NEXT
```

Line 260 Clears area where new DATA is to be placed.

```
275 X=INT(RND(1)*(B-T-1)+T)*40+1024
```

Line 275 Calculates random position for graphic.

```
280 IFRND(1)<0.5THENPOKEX,42:POKEX+54272
,1
```

Line 280 POKEs graphics character into scroll.

```
290 SYS49423
```

Line 290 GOSUBs machine code scrolling routine.

```
300 GOTO260
```

Line 300 Continues in a loop.

Now load and run as above to determine the correct margins you desire. Use as follows:

1 Find the values of the variables used in line 230. Use these values in your own POKE statement line.
2 Set the screen to 38 column mode.
3 Set the scrolling register to the minimum.
4 Clear the area for new data.
5 Introduce the new data.
6 SYS 49423.

SCRATCHPAD

Medium-Resolution Plotting

On the 64 you've normally got the choice of two graphics modes. The first is the low-resolution character plot. In this mode you simply PRINT or POKE block graphics characters to the screen, giving a resolution of 25x40. The second is high-resolution (bit-mapped) mode, where you have a resolution of 200x320. But there are times when it would be useful to have something between these two extremes: a medium resolution plot. This program, by Mark Hart, provides this facility — giving a resolution of 50x80.

A glance through the library of CBM graphics characters reveals that they are composed of various combinations of quarter-squares. These are reproduced below together with their PEEK/POKE codes. Each character has been numbered 0-15 and we'll refer to the character by this number from now on.

These quarter square graphics characters form the basis of our medium resolution plot. We first determine which quarter square (or quadrant) we wish to fill. Having determined that, we must now take into account whatever other characters are present in the other three quadrants to avoid overwriting graphics already present on the screen. To do this, we must:

— firstly identify if there's a graphic character already present in the position we wish to plot to and, if so, indentify its table number;

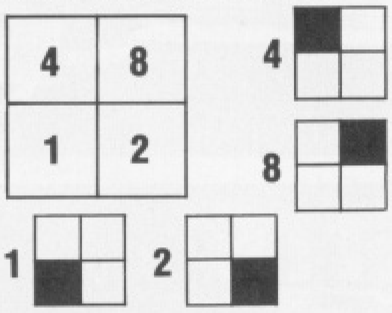
— secondly, do an 'inclusive-or' of the quadrant we wish to plot with the character already present on the screen. This gives us the 'table number' of the new character that should be plotted to the position.

An example will make this clear. Suppose we want to plot graphic character 2 in the top-left corner of the screen. When we PEEK (1024) we may find that it is already occupied (let's say by character 4), we now perform an inclusive OR of character 2 (bit pattern 00000010) with character 4 (bit pattern 00000100). An inclusive-or returns a 1 if either of the bits is a 1 and hence in this case the inclusive-or of the two characters is 00000110.

An inspection of the table below reveals that character 6 is indeed the combination of characters 2 and 4. Therefore we know that we need to POKE 127 to screen to plot our extra point while retaining the one that's already there. Using this principle you see that it's possible to determine whichever character you want to POKE to the screen by and OR of the character already displayed on the screen, and the character you want to plot. The same principal is used in both the Basic and machine code versions of the medium resolution plot.

The Basic Program

In the basic program, we now have a plot with a resolution of 49X79. The program first determines the square in which the quadrant that we want to plot will fall. Having determined this, we then work out whether the quadrant falls in the upper or lower half, and on the left or right side, of the square. A glance at the diagram below will show how this is worked out.



If on the horizontal axis, a value is exactly divided by 2 with no remainder, the plot will fall in the left hand side of the square. Hence values of 0,2,4 and so on will fall on the left hand side and odd numbers on the right. By a similar logic, we determine whether the vertical axis value will fall in the upper or lower half of the square. This then determines the quadrant into which our projected plot will fall. Having determined the quadrant, then a value is accessed via a small 2X2 look-up table containing the values of 4,8,1 and 2. These values, OR-ed with the existing table position of the character PEEKed from the screen, give the table position of the new character to POKE back to the screen.

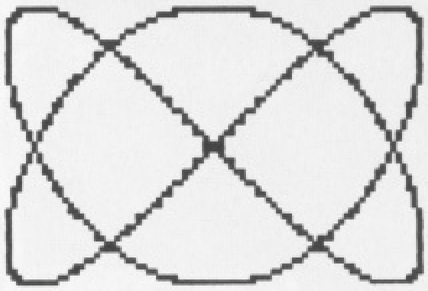
Notice how the routine when RUN first PLOTS and then UNPLOTS. This is determined by the value of T which PLOTS when equal to zero but UNPLOTS when made negative (that is, -1) in the second half of line 110. The construction in the second statement on line 1040 returns the screen graphics character to that which existed before the PLOT.

Plotting individual points with MEDIUM-RES (MC)

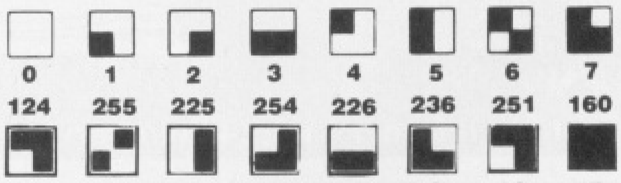
If you want to experiment with the program to PLOT individual points on the screen after you've seen the demo, remember that you need to access the colour memory at the same time. In order that you can make some first steps, try the following.

This assumes the normal graphing convention in which the origin (0,0) is in the bottom left hand corner with the y-axis representing the vertical axis and the x-axis the horizontal axis. Hence you might you like to think of the command as either SYS(PLOT)x,y or SYS(PLOT) horizontal, vertical. Happy plotting!

```
PLOT=970 : COLOUR=950
SYS(COL):SYS(PLOT) 0,49 ... puts graphic block ... top left
SYS(COL):SYS(PLOT) 79,49 ... puts graphic block ... top right
SYS(COL):SYS(PLOT) 0,0 ... puts graphic block ... bottom left
SYS(COL):SYS(PLOT) 79,0 ... puts graphic block ... bottom right
```



Ain't it pretty! Gone are the days of the High and Low Resolution Plotting. By typing in this simple program, you too can create your own Medium Resolution Plots . . .



PEEK/POKE	32	123	108	98	126	97	127	252
TABLE NO.	0	1	2	3	4	5	6	7
PEEK/POKE	124	255	225	254	226	236	251	160
TABLE NO.	8	9	10	11	12	13	14	15

The 16 characters that form the basis of medium-res plotting.

A detailed break-down of MEDIUM-RES PLOT (BASIC)

```
30 POKE53280,15:POKE53281,15:T=0
```

Line 30 Gives light background/border colours T is set to Ø (=PLOT)

```
40 DIM C(15),A(1,1):FORJ=0TO15:READ C(J)
:NEXT
50 DATA 32,123,108,98,126,97,127,252,124
,255,225,254,226,236,251,160
```

Lines 40-50 Dimensions and reads graphics codes into an array.

```
60 A(0,0)=1:A(0,1)=2:A(1,0)=4:A(1,1)=8
70 PRINT CHR$(147)
```

Line 60 Sets up small 2×2 look-up table.

```
100 FOR J=1TO2:FORX=0TO79
```

Line 100 Outer loop=2 (PLOT followed by UNPLOT) Inner loop=0-79 (=width of horizontal plot)

```
110 Y=25+24*SIN(X/8):GOSUB 1000:NEXT X:T
=NOT(T):NEXT J
120 GOTO 2000
```

Line 110 Computes a Y value (sine curve) for each X between the value of 1-49

```
1000 REM PLOT SUBROUTINE
```

Line 1000 Plots sub-routine

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```
1020 XL=INT(X/2):XS=X-2*XL:YL=INT(Y/2):Y
S=INT(Y)-2*YL
```

Line 1020 Computes which quadrant

```
1030 N=A(YS,XS):P=1984-40*YL+XL:FORI=0TO
15:IFPEEK(P)<>C(I)THENNEXTI
```

Line 1030 Looks up table value of character to be poked in (=N) Computes screen square containing quadrant (=P) Looks in array to see PEEK of screen in table

```
1040 I=IORN:IFT=-1THENI=IANDNOT(N)
```

Line 1040 Inclusive-OR table value of screen character and new quadrant graphic character. When T is reversed (line 110) then UNPLOTS.

```
1050 POKE P,C(I):POKE P+54272,0:RETURN
```

Line 1050 POKEs newly accessed graphics character back to the screen. POKEs colour memory to make visible.

A detailed break-down of MEDIUM-RES PLOT (MC)

```
2010 FORJ=828TO981:READX:T=T+X:POKEJ,X:N
EXT
2020 IFT<>21622 THEN PRINT "DATA ERROR!"
:END
2021 DATA 169,0,133,254,169,1,133,253
2022 DATA 165,251,201,80,176,56,165,252
2023 DATA 201,50,176,50,169,50,229,252
2024 DATA 70,251,38,254,106,38,254,133
2025 DATA 252,10,10,101,252,10,10,38
2026 DATA 253,10,38,253,234,234,234,133
2027 DATA 252,166,254,189,159,3,133,254
2028 DATA 164,251,177,252,162,15,221,163
2029 DATA 3,240,4,202,16,248,96,173
2030 DATA 158,3,240,6,138,5,254,170
2031 DATA 208,8,138,73,255,5,254,73
2032 DATA 255,170,189,163,3,164,251,145
2033 DATA 252,96,1,1,2,4,8,32
2034 DATA 126,123,97,124,226,255,236,108
2035 DATA 127,98,252,225,251,254,160,0
2036 DATA 234,234,162,0,169,0,157,0
2037 DATA 216,157,0,217,157,0,218,157
2038 DATA 0,219,202,208,241,96,32,235
2039 DATA 183,134,252,165,20,133,251,76
2040 DATA 60,3
```

Lines 2010-2040 Reads in the data for the machine code routine

```
2060 PLOT=970:COLOUR=950
```

Line 2060 Allocates a variable name (PLOT) to 970 for a later SYS call. Ditto with the colour memory.

```
3000 PRINT:INPUT"BACKGROUND";B
3010 PRINT:INPUT"PEN COLOUR";C
3020 PRINT:INPUT"TWO NUMBERS E.G 2,3";X,
Y
3030 POKE53280,B:POKE53281,B
3040 PRINTCHR$(147):POKE953,C:SYS(COLOUR
)
```

Lines 3000-3400 User-defines the background and pen colour for the PLOT and chooses two numbers to determine the shape of the Lissajous figure which is to be plotted. The background colour is POKEd into the registers for the screen and border and the colour memory initialised.

```
4000 FORJ=1TO800:SYS(PLOT)(1+SIN(X*J))*4
0,(1+COS(Y*J))*25:NEXT
```

Line 4000 the PLOT equation. The general syntax is SYS(PLOT)x value,y value where x=0-79 and y=0-49. Values outside this range will not be plotted. Access the colour memory with a SYS(COLOUR) before plotting individual points.

```
63000 REM SCREEN-DUMP
63010 :
63020 OPEN6,4,6:PRINT#6,CHR$(22):OPEN4,4
63030 FORI=0TO24:FORJ=0TO39
63040 A=PEEK(1024+I*40+J)
63050 GOSUB63100
63060 PRINT#4,A$;B$;C$;
63070 NEXTJ:PRINT#4:NEXTI
63080 PRINT#4:CLOSE4:END
63090 :
63100 A$="":B$="":C$=""
63110 IFA>127THENA$=CHR$(18):C$=CHR$(146
):B$=CHR$(A-64):RETURN
63120 IFA<32THENA$=CHR$(A+64):RETURN
63130 IFA>31ANDA<64THENB$=CHR$(A):RETURN
63140 IFA>63ANDA<96THENB$=CHR$(A+128):RE
TURN
63150 B$=CHR$(A+64):RETURN
```

Lines 63000-63150 Screen-dump routine so that screens may be reproduced on paper. The secondary address of CHR$(22) in line 63020 is a line spacing value designed to close up the line spacing to make the plot approximate to that found on the screen. You may need to experiment with a range of values to find one that suits your printer best. This value is the one that gives the best results on a CBM 1526 printer.

MEDIUM-RES PLOT CHECKSUM

```
-(10,95)-(15,73)-(20,102)-(25,83)-(30,31)-(40,64)
-(50,85)-(60,253)-(70,147)-(80,138)-(100,241)-(110,24)
-(120,195)-(995,32)-(1000,201)-(1010,47)-(1020,162)-(1030,170)
-(1040,222)-(1050,1)-(1060,98)-(1070,108)-(1080,118)-(1090,128)
-(2000,17)-(2001,91)-(2002,104)-(2003,199)-(2004,106)-(2010,80)
-(2020,46)-(2021,167)-(2022,17)-(2023,219)-(2024,223)-(2025,90)
-(2026,10)-(2027,32)-(2028,67)-(2029,75)-(2030,77)-(2031,91)
-(2032,30)-(2033,28)-(2034,80)-(2035,232)-(2036,74)-(2037,184)
-(2038,179)-(2039,28)-(2040,71)-(2050,68)-(2060,3)-(2070,88)
-(3000,188)-(3010,158)-(3020,236)-(3030,42)-(3040,22)-(3050,47)
-(4000,32)-(4010,243)-(63000,192)-(63010,82)-(63020,214)-(63030,217)
-(63040,250)-(63050,199)-(63060,37)-(63070,43)-(63080,242)-(63090,162)
-(63100,250)-(63110,96)-(63120,93)-(63130,94)-(63140,183)-(63150,241)
```

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KEYBOARD KAPERS

This month's Keyboard Kapers introduces Y64*'s simple error-checking system — to* instantly *detect typing errors when entering* Y64 *listings!*

How to type in Y64 listings

We know that typing in program listings can be a time-consuming and often frustrating activity. For this reason, we're constantly looking at new ways to make the task as simple and painless as possible.

We've done this since issue 2 by printing listings in 40-column, so that what you see in the magazine is what you should see on your screen. In this issue, we've introduced two new ideas. The first is a simple key to the characters that often confuse beginners. Anytime you come to a reversed character you're not sure how to enter, just consult our quick-reference key.

The second idea, which will be useful to beginners and experts alike, is a system to detect typing mistakes instantly — the *Y64* Checksum program.

Just type in the Checksum listing below and SAVE it on tape or disk. Then every time you want to type in a *Y64* listing, follow four simple steps:

1. LOAD and RUN the Checksum program.
2. Type in a line of the listing.
3. Press RETURN to enter the line. A number will be displayed in the top left-hand corner of the screen.
4. Look up the line number in the Checksum Table printed underneath the listing. If the number after the comma is the same as the number in the corner of your screen, carry on. If not, you've made a mistake in the line. Correct it and move onto the next line, returning to step 2.

For example, if you've entered line 10 and got 67 in the corner of your screen, look up 10 in the Checksum Table. if you find (10,67), you know the line is correct. If the number after the comma is different from the number in the corner of your screen, you've typed it in wrongly. In the same way, if you find (20,205) in the Checksum Table, you know that '205' should appear in the corner of your screen when you enter line 20.

All future *Y64* listings written in standard V2 basic will have a Checksum Table.

The Checksum Program contains a built-in checksum system — if you make a mistake in the DATA statements, the program itself will tell you which line the mistake is in when you RUN it.

We hope you find the system useful. In the meantime, if you have any suggestions about how we could make typing listings easier still, let us know!

Y64 CHECKSUM PROGRAM

```
40 PRINT"█PLEASE WAIT..":GOSUB10000:SYS4
9152
45 PRINT"█SYNTAX CHECKER NOW ENABLED."
50 PRINT"TYPE IN YOUR PROGRAM NOW."
55 PRINT"█TYPE 'SYS49295' TO TURN SYNTAX
 CHECKER"
60 PRINT"OFF. ALWAYS TURN OFF BEFORE SAV
EING OR"
65 PRINT"LOADING."
70 PRINT"█TYPE 'SYS49152' TO RESTART.":N
EW
999 END
10000 READA,B,L:FORI=ATOBSTEP8:T=0:L=L+1
0:FORJ=0TO7
10010 X=I+J:IFX<=BTHENREADM:T=T+M:POKEX,
M:NEXTJ
10020 READT1:IFT<>T1THENPRINT"ERROR IN L
INE"L:END
10030 NEXTI:RETURN
10040 DATA49152,49310,10040
10050 DATA173,4,3,201,31,208,1,96,717
10060 DATA173,4,3,141,32,192,173,5,723
10070 DATA3,141,33,192,169,31,141,4,714
10080 DATA3,169,192,141,5,3,96,32,641
10090 DATA0,223,141,60,3,142,61,3,633
10100 DATA140,62,3,162,0,134,254,165,920
10110 DATA20,24,101,254,133,254,165,21,9
72
10120 DATA24,101,254,133,254,183,0,2,957
10130 DATA201,0,240,12,201,32,240,5,931
10140 DATA24,101,254,133,254,232,208,237
,1443
10150 DATA169,13,32,210,255,164,214,136,
1193
10160 DATA136,132,253,169,18,32,210,255,
1205
10170 DATA169,19,32,210,255,169,32,32,91
8
10180 DATA210,255,32,210,255,32,210,255,
1459
10190 DATA169,19,32,210,255,166,254,169,
1274
10200 DATA0,32,205,189,164,253,132,214,1
189
10210 DATA169,13,32,210,255,173,60,3,915
10220 DATA174,61,3,172,62,3,96,173,744
10230 DATA32,192,141,4,3,173,33,192,770
10240 DATA141,5,3,96,255,191,0,691
```

Y64 QUICK-REFERENCE KEY TO CONTROL CHARACTERS

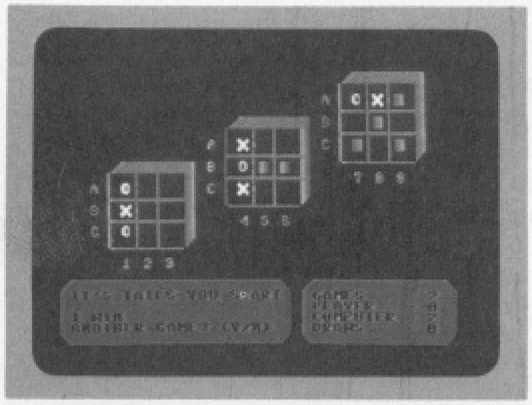
[CLR/HOME]	[F3]	[CTRL] + [3]	[C=] + [1]
[SHIFT] + [CLR/HOME]	[SHIFT] + [F3]	[CTRL] + [4]	[C=] + [2]
[UP/DOWN CRSR]	[F5]	[CTRL] + [5]	[C=] + [3]
[SHIFT] + [UP/DOWN CRSR]	[SHIFT] + [F5]	[CTRL] + [6]	[C=] + [4]
[LEFT/RIGHT CRSR]	[F7]	[CTRL] + [7]	[C=] + [5]
[SHIFT] + [LEFT/RIGHT CSRS]	[SHIFT] + [F7]	[CTRL] + [8]	[C=] + [6]
[F1]	[CTRL] + [1]	[CTRL] + [9]	[C=] + [7]
[SHIFT] + [F1]	[CTRL] + [2]	[CTRL] + [0]	[C=] + [8]

DANGER: OFFICIAL Y64 HEALTH WARNING:

Typing in listings can seriously damage your sanity. Always use the **Y64** Checksum system supplied in **Keyboard Kapers**. Type in listings from other magazines at your own risk!

KEYBOARD KAPERS

3D O's and X's, by R Blunt, is a game that always seems simple but actually requires careful thought. The computer plays a reasonably intelligent game: although I managed to beat it more time than not, it put up a good fight. Instructions are given in the game.



The Y64 photographer's not having much luck!

```
1000 REM#*******************************
1010 REM TITLE
1020 REM*******************************
1030 PRINT"[CLR]":POKE53280,0:POKE53281,0
1040 PRINT"[graphics]"
1050 PRINT"  [graphics]"
1060 PRINT"  [graphics]"
1070 PRINT"  [graphics]";
1080 PRINT"  [graphics]"
;
1090 PRINT"  [graphics]";
1100 PRINT"  [graphics]";
1110 PRINT"  [graphics]";
1120 PRINT"
        [graphics]";
1130 PRINT"  [graphics]
        [graphics]"
1140 PRINT"[graphics]BY R.BLUNT 19
84"
1150 FORJ=1TO4000:NEXTJ
```

Lines 1000-1150 Display.

```
2000 REM#*******************************
2010 REM INITIALISE VARIABLES
2020 REM*******************************
2030 VO=54296:WA=54276:AD=54277:SR=54278
:LO=54272:HI=54273
2040 WC=0:WP=0:GA=0:DR=0:D=54272:N=0:G=0
:M=0:DIML(27),C(27)
2050 L(1)=1430:L(2)=1432:L(3)=1434
2060 L(4)=1510:L(5)=1512:L(6)=1514
2070 L(7)=1590:L(8)=1592:L(9)=1594
2080 L(10)=1281:L(11)=1283:L(12)=1285
2090 L(13)=1361:L(14)=1363:L(15)=1365
2100 L(16)=1441:L(17)=1443:L(18)=1445
2110 L(19)=1132:L(20)=1134:L(21)=1136
2120 L(22)=1212:L(23)=1214:L(24)=1216
2130 L(25)=1292:L(26)=1294:L(27)=1296
2140 A$="[graphics]A |  |  | [graphics]"
2150 B$=" [graphics]B |  |  |
[graphics]"
2160 C$="C |  |  | [graphics]|  |  |
[graphics]"
```

Lines 2000-2160 Initialise main variables.

```
3000 REM#*******************************
3010 REM INSTRUCTIONS
3020 REM*******************************
3030 PRINT"[CLR]":PRINTCHR$(14)
3040 PRINT"[graphics]"
3050 PRINT"[graphics]HREEWAY IS A NOUGHTS AND CR
OSSES GAME"
3060 PRINT"PLAYED IN THREE DIMENSIONS."
3070 PRINT"[graphics]F THE TWENTY SEVEN POSSIBLE
 POSITIONS,"
3080 PRINT"SIX ARE BLANKED OFF,ALWAYS IN
CLUDING THE";
3090 PRINT"CENTRAL LOCATION."
3100 PRINT"[graphics]EFORE COMMENCING A GAME THE
 COMPUTER"
3110 PRINT"TOSSES A COIN TO DECIDE WHO W
ILL MAKE"
3120 PRINT"THE FIRST MOVE. UST SELECT HE
ADS OR"
3130 PRINT"TAILS.
3140 PRINT"[graphics]N BEING PROMPTED FOR YOUR M
OVE,ENTER"
3150 PRINT"THE LETTER OF THE ROW AND THE
 NUMBER OF"
3160 PRINT"THE COLUMN.[graphics] KEY IS N
ECESSARY."
3170 PRINT"[graphics]HE COMPUTER PLAYS NOUGHTS A
ND YOU PLAY"
3180 PRINT"CROSSES."
3190 PRINT"[graphics]!!!"
3200 PRINT"[graphics]";
3210 POKE198,0
3220 GETZ$:IFZ$=""THEN3220
```

Lines 3000-3220 Display instructions and wait for key press.

```
4000 REM#*******************************
4010 REM PRINT MATRIX ETC
4020 REM*******************************
4030 PRINT"[graphics]"CHR$(142)
4040 PRINT"[graphics]"
A$;B$;C$
4050 PRINT"[graphics]7
 8 9"
4060 PRINT"[graphics]"A$;B$;
C$
4070 PRINT"[graphics]4 5 6"
4080 PRINT"[graphics]"A$;B$;C$
4090 PRINT"[graphics]1 2 3";
4100 GOSUB16000
```

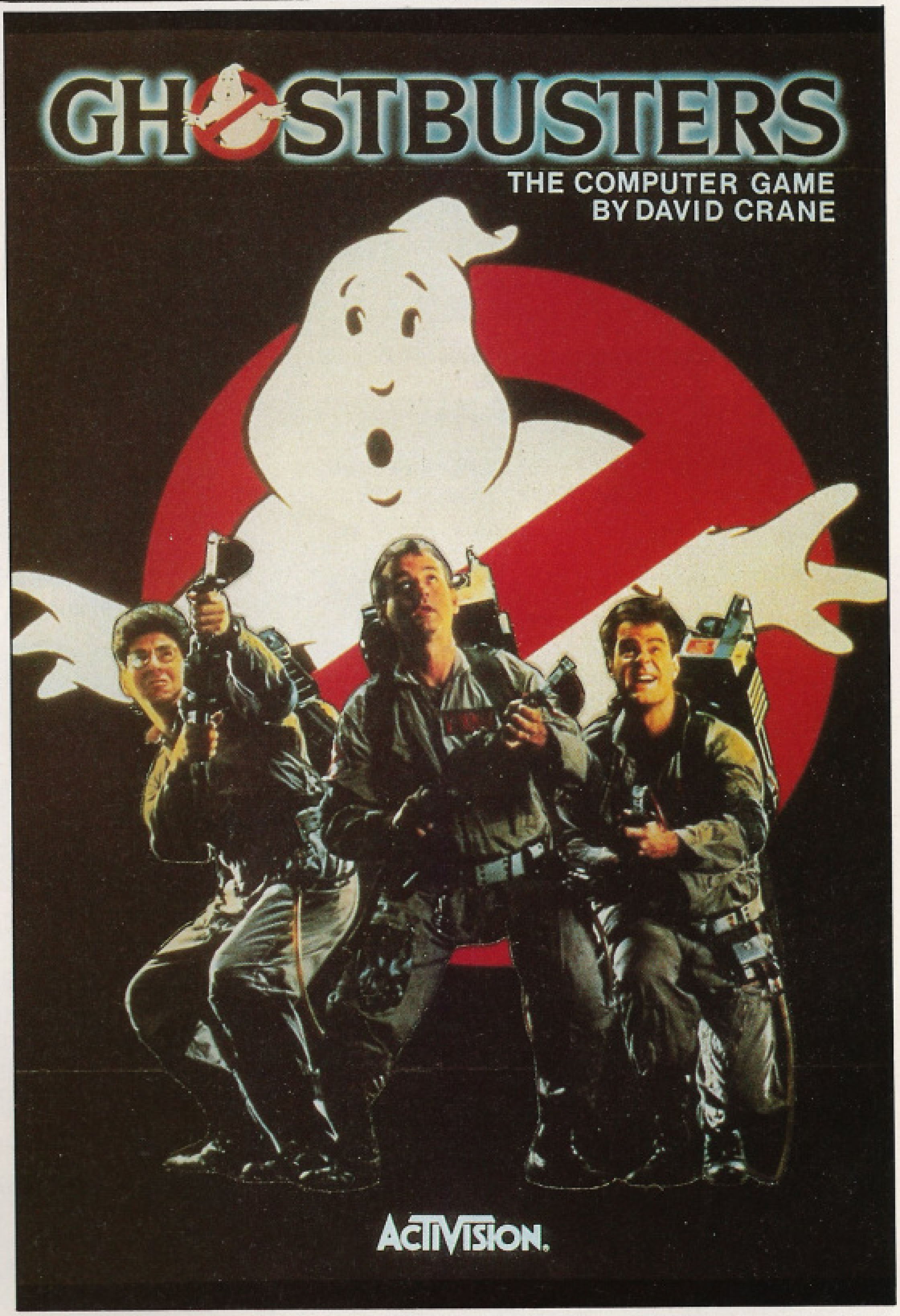
Lines 4000-4100 Display matrix and scoreboard.

```
5000 REM#*******************************
```

DANGER: OFFICIAL Y64 HEALTH WARNING:
Typing in listings can seriously damage your sanity. Always use the **Y64** Checksum system supplied in **Keyboard Kapers**. Type in listings from other magazines at your own risk!

Y 64 COMPETITION

WORD BUSTIN'



I 'ain't afraid of no ghost . . . ah! Ghostbustin' fever has struck Britain! Seems you can't go anywhere without seeing the film, hearing the record or finding someone playing the game. And in case you haven't got your copy of the game yet, here's your chance to do so completely free of charge!

Spot Those Games!

All you have to do to be in with a chance of winning your own copy of the game of the film, and maybe a whole lot more besides, is to solve a simple wordsquare! Activision has hidden several of its software titles in the wordsquare below (we're not telling you how many!). Each title can read forwards, backwards, up, down or diagonally (in any of four directions, of course). All you have to do is to circle each title you find. When you think you've circled all the titles, simply complete the tie-breaker question in a witty and original way. Easy, huh?

Tie-breaker

Please complete the following tie-breaker using not more than 15 words:
"I want to go Ghostbusin' because.....".
Don't forget to answer as wittily as possible if you want to be the big winner!

The Bounty

The person to find all the titles and complete the tie-breaker in the wittiest way will win a 1541 disk drive, all of Activision's CBM 64 titles to date (including, of course, *Ghostbusters*) plus a lifetime subscription to Activision's 64 software! Every time Activision releases a new title for the 64, one of the very first copies will be rushed to you with the company's compliments!

Five 2nd prize winners will each receive ten Activision titles, and 100 runners-up will win a copy of *Ghostbusters* apiece!

Activision has been producing popular 64 titles on both cassette and disk since last year — and *Ghostbusters* looks like it could well be one of Activision's most successful titles! The company's other 64 software includes: • Beamrider • Decathlon • Designer's Pencil • H.E.R.O. • Pitfall • Pitfall II • River Raid • Space Shuttle • Toy Bizarre • Zenji

How to enter

Simply circle or highlight the hidden titles, complete the tie-breaker and fill in your name and address. Write the total number of titles found on the outside of your envelope and send your entry to: *Y64 Ghostbusters Compo, 14 Rathbone Place, London W1P 1DE.*

Groundrules

1. The decision of the judges is final. No correspondence will be entered into.
2. Entries which are illegible, incomplete or which do not fully satisfy the rules will be disqualified.
3. All material sent will be retained and may be published without further permission.
4. All entries must be received by March 30th. Entries arriving after this date will not be considered.

L	O	N	E	R	R	A	Z	I	B	Y	O	T	I	P
R	I	V	E	R	R	A	I	D	D	R	J	E	J	E
H	J	C	S	A	G	S	V	C	E	F	G	A	H	N
T	N	I	N	B	N	R	O	H	C	E	A	P	A	S
A	E	G	I	E	I	E	L	K	A	L	M	A	N	I
T	Z	N	P	A	P	T	P	I	T	F	A	L	L	O
N	E	I	S	M	N	S	I	K	H	P	O	L	I	R
E	N	R	T	R	I	U	R	Q	L	R	S	S	T	N
P	P	E	O	I	V	B	A	E	O	W	T	T	P	O
E	I	T	B	D	I	T	E	X	N	V	V	O	A	L
D	V	T	S	E	R	S	T	U	B	G	O	O	L	B
V	I	E	L	R	D	O	L	E	F	N	I	P	L	A
B	E	L	T	T	U	H	S	E	C	A	P	S	E	T
A	C	I	S	T	I	G	H	O	S	T	B	L	E	E
H	A	T	R	I	V	S	E	L	T	T	A	B	E	D

```
5010 REM BLANK AREAS
5020 REM********************************
5030 POKEL(14),160:POKED+L(14),14:X=0
5040 BL=INT(RND(1)*27)+1:IFBL/2=INT(BL/2
)THEN5040
5050 FORJ=1TO27
5060 IFBL=JANDPEEK(L(J))=32THENPOKEL(J),
160:POKED+L(J),14:X=X+1
5070 NEXTJ
5080 IFX<5THEN5040
```

Lines 5000-5080 Blank off central location and 5 random locations.

```
6000 REM#*******************************
6010 REM TOSS COIN
6020 REM********************************
6030 PRINT"SQQQQQQQQQQQQQQQQQQQQQQRHEAD
S OR TAILS"
6040 POKE198,0
6050 GETT$:IFT$<>"H"ANDT$<>"T"THEN6050
6060 IFT$="H"THENPRINT"SQQQQQQQQQQQQQQQQ
QQQQRHEADS":T$="HEADS"
6070 IFT$="T"THENPRINT"SQQQQQQQQQQQQQQQQ
QQQQRTAILS":T$="TAILS"
6080 FORJ=1TO1500:NEXTJ:IFRND(1)>0.5THEN
TT$="HEADS":GOTO6100
6090 TT$="TAILS"
6100 IFT$=TT$THENPRINT"SQQQQQQQQQQQQQQQQ
QQQQRIT'S "TT$"-YOU START"
6110 IFT$<>TT$THENPRINT"SQQQQQQQQQQQQQQQ
QQQQQRIT'S "TT$"-I START":GOTO8060
```

Lines 6000-6110 'Toss' coin and display result.

```
7000 REM#*******************************
7010 REM GET PLAYERS CO-ORDINATES
7020 REM********************************
7030 PRINT"SQQQQQQQQQQQQQQQQQQQQQQR
YOUR MOVE    "
7040 POKE198,0
7050 PRINT"SQQQQQQQQQQQQQQQQQQQQQQQRROW
LETTER    ?";:GETY$
7060 IFY$<"A"ORY$>"C"THEN7050
7070 IFY$="A"THENY=1
7080 IFY$="B"THENY=2
7090 IFY$="C"THENY=3
7100 PRINTY$
7110 PRINT"SQQQQQQQQQQQQQQQQQQQQQQQRCOL
UMN NUMBER ?";:GETX$
7120 IFX$<"1"ORX$>"9"THEN7110
7130 X=VAL(X$)
7140 PRINTX$
7150 PRINT"SQQQQQQQQQQQQQQQQQQQQQQR
PLEASE WAIT"
7160 IFX<4THENPL=1348
7170 IFX>3ANDX<7THENPL=1199:X=X-3
7180 IFX>6THENPL=1050:X=X-6
```

Lines 7000-7180 Obtain player's coordinates and translate to screen locations.

```
8000 REM#*******************************
8010 REM SHOW PLAYERS MOVE
8020 REM********************************
8030 IFPEEK(PL+2*X+80*Y)<>32THEN15000
8040 POKEPL+2*X+80*Y,86:POKED+PL+2*X+80*
Y,1
8050 N=N+1
8060 FORJ=1TO27:C(J)=PEEK(L(J)):NEXTJ:RE
M EXAMINE MATRIX
```

Lines 8000-8060 Display player's move in Matrix.

```
9000 REM#*******************************
9010 REM IDENTIFY ALL POSSIBLE LINES
9020 REM********************************
9030 Z=1:IFN<3THENZ=4
9040 IFN<1THENZ=6
9050 RESTORE
9060 IFN=1THENFORJ=1TO24:READA,B,C:NEXTJ
9070 READA,B,C:IFA<0THEN9100
9080 GOSUB17000:IFM>0THEN9110
9090 GOTO9070
9100 Z=Z+1:IFZ<8THEN9050
9110 ONMGOTO12000,11000,13000
```

Lines 9000-9110 Identify all possible lines for evaluation.

```
10000 REM#******************************
10010 REM CLEAR PREVIOUS DETAILS ETC
10020 REM*******************************
10030 PRINT"SQQQQQQQQQQQQQQQQQQQQQQQR
      "
10040 PRINT"QR                   "
10050 N=N+1:IFN>20THEN13000:REM MATRIX I
S FULL
10060 M=0:GOTO7000
```

Lines 10000-10060 Clear previous details, check for full matrix and return for next move.

```
11000 REM#******************************
11010 REM COMPUTER WINS
11020 REM*******************************
11030 PRINT"SQQQQQQQQQQQQQQQQQQQQQQQRI W
IN            ":WC=WC+1:GOTO14000
```

Lines 11000-11030 Display computer win.

```
12000 REM#******************************
12010 REM PLAYER WINS
12020 REM*******************************
12030 PRINT"SQQQQQQQQQQQQQQQQQQQQQQQRYOU
 WIN           ":WP=WP+1:GOTO14000
```

Lines 12000-12030 Display player win.

```
13000 REM#******************************
13010 REM DRAWN GAME
13020 REM*******************************
13030 PRINT"SQQQQQQQQQQQQQQQQQQQQQQQRGAM
E DRAWN        ":DR=DR+1:G=1
```

Lines 13000-13030 Display drawn game.

```
14000 REM#******************************
14010 REM END OF GAME
14020 REM*******************************
14030 GA=GA+1:PRINT"TR
"
14040 PRINT"QRANOTHER GAME? (Y/N)":GOSU
B16060:POKE198,0
```



LIGHTNING STRIKES AGAIN

BASIC LIGHTNING

WHITE LIGHTNING

MACHINE LIGHTNING

THREE HIGH POWERED GRAPHICS DEVELOPMENT SYSTEMS FOR THE **COMMODORE 64.**

OASIS SOFTWARE

Totally dedicated to writing very fast, video games, BASIC Lightning is a is a fully structured extension to the Commodore BASIC which adds a staggering 200 reserved words. It allows up to five tasks to run concurrently (one in foreground and four in background). Most of the commands are dedicated to games writing and the sound and graphics commands are unparalleled. Procedures and PASCAL type structured programming commands are also a feature of BASIC Lightning.

As well as the Commodore's own 8 hardware sprites, BASIC Lightning has its own software sprites. Up to 255 can be defined with user selectable dimensions. These can even be several screens wide. They can be scrolled, spun, mirrored, enlarged or inverted with phenomenal speed and smoothness.

A Sprite Generator Program (written in BASIC Lightning) is also supplied and can be used to design, edit and store all your sprites for use in your main program.

White Lightning is a complete games writing package comprising a high level, Forth based, multi-tasking games writing language, the extended BASIC (see BASIC LIGHTNING) and a powerful sprite Generator Program. Programs can even be written in a combination of Forth and Commodore BASIC and the final program, which will run independently of White Lightning, can be marketed with no restrictions whatsoever.

The Basic Lightning part of the package can be used to experiment quickly and easily before the Forth program is developed.

The speed of White Lightning has to be seen to be believed and a full demo is included. As with Basic Lightning, hardware sprites are supported, together with 255 software sprites which can be scrolled, spun, reflected, enlarged or inverted.

MULTI-TASKING Without doubt the most powerful feature of the Lightning series of languages is the multi-tasking facility. This allows two programs to be run concurrently and makes those smooth landscape scrolls etc. effortless.

The BASIC Lightning Sprite Generator Program is also included in the package.

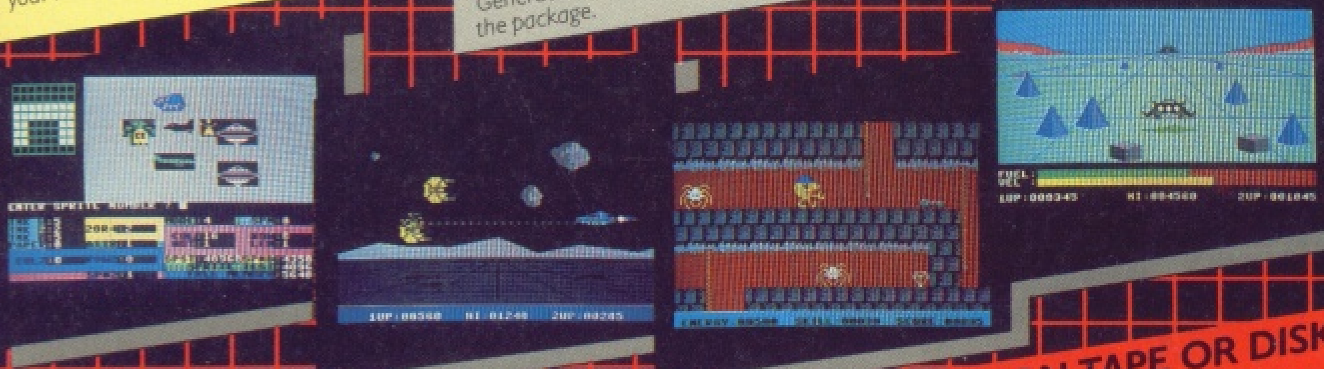
Commodore 64 Machine Lightning is probably the most advanced games writing utility available on any micro. It comes in 4 parts:

MACRO ASSEMBLER/ MONITOR/DISASSEMBLER This is probably the most comprehensive machine code development system available for the Commodore 64 with features too numerous to mention.

BASIC LIGHTNING BASIC Lightning, the multi-tasking BASIC is also provided to facilitate experimentation in preparation for later assembly.

SPRITE GENERATOR Used to develop all the graphics for the final game. The Sprite Generator has numerous functions including enlargement, rotation and reflection.

OBJECT LIBRARY This is Machine Lightning's most powerful feature. 10k of re-entrant code with more than 130 documented entry points. These are the routines that provide all the superfast graphics routines in White and Basic Lightning. They contain virtually every routine you'll ever need to write an Arcade Game and multi-tasking in Machine Lightning is covered in the comprehensive accompanying manual.



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```
14050 IFG=0THENFORJ=1TO20:POKED+L(A),11:
POKED+L(B),11:POKED+L(C),11:NEXTJ
14060 IFG=0THENFORJ=1TO20:POKED+L(A),1:P
OKED+L(B),1:POKED+L(C),1:NEXTJ
14070 GETZ$:IFZ$<>"Y"ANDZ$<>"N"THEN14050
14080 IFZ$="N"THENPRINT"[CLR]":POKE53280,14
:POKE53281,6:END
14090 N=0:G=0:M=0:GOTO4000
```

Lines 14000-14090 End of game sequence.

```
15000 REM#*****************************
15010 REM ILLEGAL MOVE
15020 REM*****************************
15030 PRINT"[HOME][DOWN x22][RVS]ILL
EGAL MOVE     "
15040 PRINT"[RVS]                    "
15050 POKEVO,15:POKEAD,15:POKESR,240:POK
EWA,33:POKELO,127:POKEHI,48
15060 FORJ=1TO100:NEXTJ
15070 POKEVO,0:POKEWA,0:FORJ=1TO1500:NEX
TJ:GOTO7000
```

Lines 15000-15070 Signal to player an illegal entry.

```
16000 REM#****************************
16010 REM PROMPT PANEL & SCOREBOARD
16020 REM****************************
16030 PRINT"[HOME][DOWN x20][RVS]
        "
16040 FORJ=1TO4:PRINT"[RVS]
   ":NEXTJ
16050 PRINT"[RVS]                  ";
16060 PRINT"[HOME][RIGHT x25][DOWN x22][RVS]
               "
16070 PRINT"[RIGHT x26][RVS] GAM
ES    -     ";:PRINT"[LEFT x4]"CHR$(18)GA
16080 PRINT"[RIGHT x26][RVS] PLA
YER   -     ";:PRINT"[LEFT x4]"CHR$(18)WP
16090 PRINT"[RIGHT x26][RVS] COM
PUTER -     ";:PRINT"[LEFT x4]"CHR$(18)WC
16100 PRINT"[RIGHT x26][RVS] DRA
WS    -     ";:PRINT"[LEFT x4]"CHR$(18)DR
16110 PRINT"[RIGHT x26][RVS]
      ";
16120 RETURN
```

Lines 16000-16120 Subroutine to display prompt panel and scoreboard.

```
17000 REM#****************************
17010 REM S/R TO EXAM. LINES & REACT
17020 REM****************************
17030 ONZGOTO17040,17070,17120,17170,172
20,17270,17300
17040 REM ? PLAYERS WINNING LINE
17050 IFC(A)=86ANDC(B)=86ANDC(C)=86THENM
=1
17060 GOTO17320
17070 REM ? COMPUTER WINS THIS MOVE
17080 IFC(A)=15ANDC(B)=15ANDC(C)=32THENP
OKEL(C),15:POKED+L(C),1:M=2:GOTO17320
17090 IFC(A)=15ANDC(C)=15ANDC(B)=32THENP
OKEL(B),15:POKED+L(B),1:M=2:GOTO17320
17100 IFC(B)=15ANDC(C)=15ANDC(A)=32THENP
OKEL(A),15:POKED+L(A),1:M=2:GOTO17320
17110 GOTO17320
17120 REM ? 2 CROSSES & 1 SPACE
17130 IFC(A)=86ANDC(B)=86ANDC(C)=32THENP
OKEL(C),15:POKED+L(C),1:M=4:GOTO17320
17140 IFC(A)=86ANDC(C)=86ANDC(B)=32THENP
OKEL(B),15:POKED+L(B),1:M=4:GOTO17320
17150 IFC(B)=86ANDC(C)=86ANDC(A)=32THENP
OKEL(A),15:POKED+L(A),1:M=4:GOTO17320
17160 GOTO17320
17170 REM ? 1 NOUGHT & 2 SPACES
17180 IFC(A)=15ANDC(B)=32ANDC(C)=32THENP
OKEL(C),15:POKED+L(C),1:M=4:GOTO17320
17190 IFC(A)=32ANDC(B)=15ANDC(C)=32THENP
OKEL(C),15:POKED+L(C),1:M=4:GOTO17320
17200 IFC(A)=32ANDC(B)=32ANDC(C)=15THENP
OKEL(A),15:POKED+L(A),1:M=4:GOTO17320
17210 GOTO17320
17220 REM ? 1 CROSS & 2 SPACES
17230 IFC(A)=86ANDC(B)=32ANDC(C)=32THENP
OKEL(B),15:POKED+L(B),1:M=4:GOTO17320
17240 IFC(A)=32ANDC(B)=86ANDC(C)=32THENP
OKEL(A),15:POKED+L(A),1:M=4:GOTO17320
17250 IFC(A)=32ANDC(B)=32ANDC(C)=86THENP
OKEL(B),15:POKED+L(B),1:M=4:GOTO17320
17260 GOTO17320
17270 REM ? 3 SPACES IN LINE
17280 IFC(A)=32ANDC(B)=32ANDC(C)=32THENP
OKEL(A),15:POKED+L(A),1:M=4:GOTO17320
17290 GOTO17320
17300 REM NOBODY CAN WIN
17310 M=3
17320 RETURN
```

Lines 17000-17320 Evaluate each line and respond accordingly.

```
18000 REM#****************************
18010 REM SUBSCRIPT DATA - EACH LINE
18020 REM****************************
18030 DATA1,4,7,2,5,8,3,6,9,12,15,18,21,
24,27,20,23,26,19,22,25,10,13,16,1,2,3
18040 DATA4,5,6,7,8,9,10,11,12,16,17,18,
19,20,21,22,23,24,25,26,27,1,10,19
18050 DATA4,13,22,7,16,25,2,11,20,8,17,2
6,3,12,21,6,15,24,9,18,27,1,5,9,3,5,7
18060 DATA19,23,27,21,23,25,1,13,25,19,1
3,7,3,15,27,21,15,9,1,11,21,3,11,19
18070 DATA7,17,27,9,17,25,-1,-1,-1
```

Lines 18000-18070 Subscript data for each line.

Y64 CHECKSUM TABLE; 3D Os & Xs

```
-(1000,95)-(1010,6)-(1020,122)-(1030,217)-(1040,230)-(1050,159)
-(1060,77)-(1070,177)-(1080,76)-(1090,3)-(1100,188)-(1110,53)
-(1120,32)-(1130,65)-(1140,244)-(1150,158)-(2000,75)-(2010,244)
-(2020,102)-(2030,4)-(2040,237)-(2050,95)-(2060,111)-(2070,154)
-(2080,25)-(2090,41)-(2100,57)-(2110,43)-(2120,56)-(2130,99)
-(2140,128)-(2150,143)-(2160,43)-(3000,55)-(3010,17)-(3020,82)
-(3030,161)-(3040,3)-(3050,224)-(3060,209)-(3070,174)-(3080,63)
-(3090,139)-(3100,212)-(3110,223)-(3120,115)-(3130,172)-(3140,66)
-(3150,104)-(3160,123)-(3170,227)-(3180,165)-(3190,74)-(3200,73)
-(3210,43)-(3220,102)-(4000,249)-(4010,134)-(4020,20)-(4030,134)
```

YOUR 64 *MISELLANEAD*

YOUR 64 *MISELLANEAD*

KEYBOARD KAPERS

```
-(4040,252)-(4050,146)-(4060,166)-(4070,94)-(4080,123)-(4090,101)
-(4100,152)-(5000,229)-(5010,3)-(5020,0)-(5030,219)-(5040,253)
-(5050,136)-(5060,66)-(5070,173)-(5080,38)-(6000,209)-(6010,146)
-(6020,236)-(6030,243)-(6040,68)-(6050,148)-(6060,179)-(6070,254)
-(6080,147)-(6090,32)-(6100,101)-(6110,254)-(7000,189)-(7010,116)
-(7020,216)-(7030,190)-(7040,48)-(7050,113)-(7060,199)-(7070,219)
-(7080,231)-(7090,243)-(7100,237)-(7110,140)-(7120,228)-(7130,145)
-(7140,20)-(7150,159)-(7160,162)-(7170,25)-(7180,42)-(8000,169)
-(8010,144)-(8020,196)-(8030,20)-(8040,250)-(8050,186)-(8060,197)
-(9000,149)-(9010,245)-(9020,176)-(9030,134)-(9040,25)-(9050,9)
-(9060,135)-(9070,144)-(9080,133)-(9090,254)-(9100,111)-(9110,81)
-(10000,87)-(10010,150)-(10020,114)-(10030,234)-(10040,107)-(10050,192)
-(10060,44)-(11000,66)-(11010,108)-(11020,94)-(11030,192)-(12000,46)
-(12010,181)-(12020,73)-(12030,121)-(13000,26)-(13010,41)-(13020,53)
-(13030,154)-(14000,6)-(14010,5)-(14020,33)-(14030,9)-(14040,79)
-(14050,177)-(14060,40)-(14070,83)-(14080,137)-(14090,196)-(15000,242)
-(15010,156)-(15020,13)-(15030,182)-(15040,233)-(15050,25)-(15060,247)
-(15070,87)-(16000,222)-(16010,179)-(16020,249)-(16030,199)-(16040,155)
-(16050,52)-(16060,98)-(16070,247)-(16080,128)-(16090,31)-(16100,55)
-(16110,11)-(16120,196)-(17000,202)-(17010,35)-(17020,229)-(17030,50)
-(17040,2)-(17050,126)-(17060,108)-(17070,221)-(17080,131)-(17090,139)
-(17100,147)-(17110,158)-(17120,7)-(17130,199)-(17140,207)-(17150,215)
-(17160,209)-(17170,64)-(17180,233)-(17190,243)-(17200,249)-(17210,3)
-(17220,39)-(17230,33)-(17240,41)-(17250,53)-(17260,53)-(17270,56)
-(17280,72)-(17290,83)-(17300,241)-(17310,19)-(17320,121)-(18000,182)
-(18010,110)-(18020,209)-(18030,22)-(18040,108)-(18050,6)-(18060,170)
-(18070,233)
```

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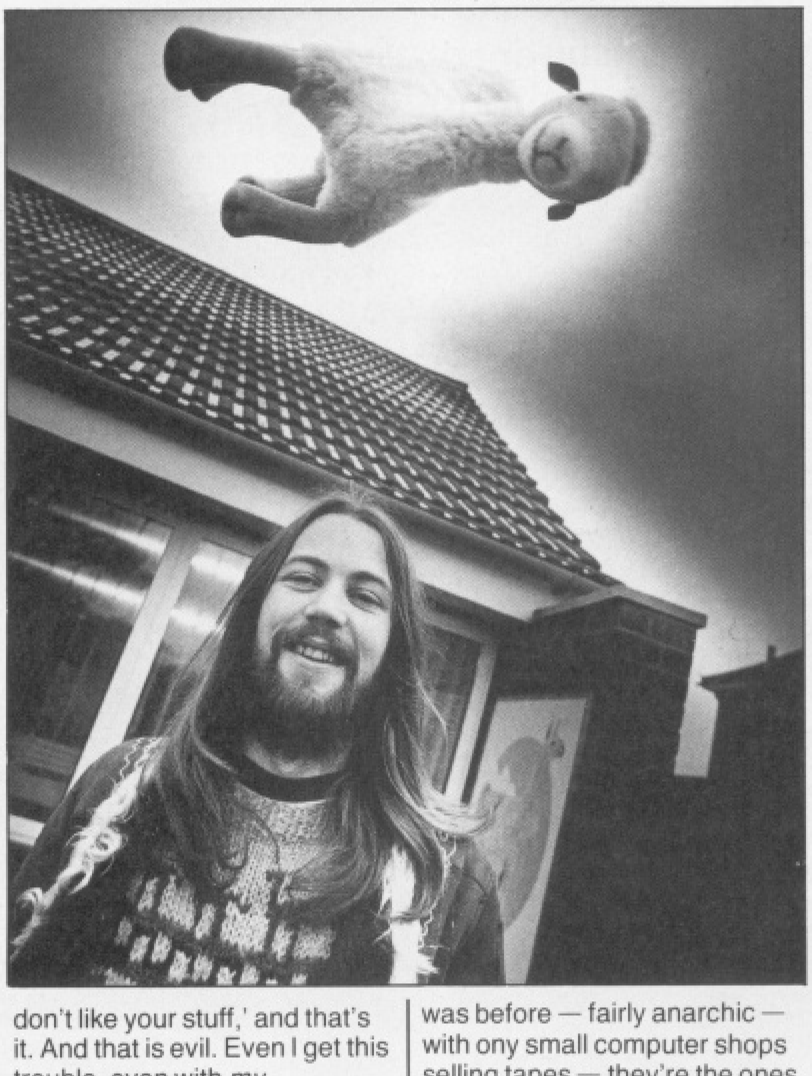
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T A L K I N ' 6 4

Obsessed with llamas, sheep and goats, Jeff Minter has to be one of the most original programmers around. Surya tracked him down to discover whether this man really is *as eccentric as his life-style suggests.*



TONY SLEEP

Visiting Jeff Minter at his home in Tadley is no ordinary experience although from the outside, the Minter abode looks pretty much like any other suburban home.

It's when you step into the Llamasoft office/living room that it suddenly strikes you that there's something not quite, well, sane about its occupant.

It could be the llamas, not just one or two, but dozens of the things, llama rugs, llama jerseys, llama mobiles, a llama mural, soft toy llamas, wooden llamas, a llama ashtray ... then there are the camels. Admittedly, not as numerous as the llamas, but still more camels than you'd find in the average home. "Pull up a sheep and sit down," invites Minter. And there they are, two life-sized replicas of sheep! I grab one and sit down, staring at a bench covered with equipment: an Apple, some CBM disk drives, a 64 (of course) a Spectrum, a 27-inch monitor, and an incredibly battered looking VIC lies on the floor. "That's my original VIC", comments Minter. "I could probably auction it."

So, what makes a Minter game so successful? "I don't know, maybe the fact that I don't take it too seriously and I've tried very hard to develop my own style. A lot of people are just writing to formulas — I mean anyone can write a hit game . . . all you've got to do is to create pretty graphics, put in a nice tune, smooth-scroll, cute characters, and there you go. You've got it. Anyone can do that." (*Hmm? Ed.*) "What I've always tried to do is to take some element that's new and interesting and develop the game around that."

And how much money have you earned from your games? "I don't know, I'm a bit out of touch with that. A good few K I guess. I exist to program, I live to create, I'm not interested in that side of it.

What do you think of the commercialism of games software? "The worst thing that happened to games, ever, ever, is that the chain stores started distributing them. Now the distributors have got a monopoly. You spend three months writing a game, the distributors decide 'well, we don't like your stuff,' and that's it. And that is evil. Even I get this trouble, even with *my* reputation. They don't even look at a game to see how good or original it is, they just say 'How much advertising are you going to do?' That's all that interests them. So the big companies are the only ones that stand a chance. The innovators — the small guys that think 'Right, let's try something a little different' — aren't in those companies. *Psychedelia* wouldn't have lasted five minutes inside a big company — it would have been too risky, too different. All that's going to happen is that the big boys will turn out established stuff for a few years, then it'll stagnate and the whole industry will collapse."

Have you no hope for the future of the home computer industry? "Well, after the holocaust (so to speak) it'll revert to more or less the way it was before — fairly anarchic — with ony small computer shops selling tapes — they're the ones who know what's good.

Why do you keep writing for the unexpanded VIC? "I love working on the VIC. The big chunky graphics work so well under certain circumstances, and the sound is the best of any low-end micro I've ever come across. Listen to *Lazer Zone* on a VIC. Only an arcade game sounds better."

What was the first game you ever wrote? "The first game ever, *ever*? It was on a PET. I walked into a computer room and saw someone playing a game, and liked the idea of making up my own games. I got a book on Basic, read it, came back in early the next morning and wrote a biorhythym program that didn't work. I stuck to Basic for about three weeks . . . and then I got a book on machine code.

"I didn't think that I was going to do it for a living, ever. But a few people asked me if I'd thought about selling any of my games. I hadn't, but I'd been doing some stuff on the ZX81 so I wrote to DK'Tronics and said 'I've got some games, are you interested?'. They were'.

Llamasoft's latest product is, to say the least, different. (*Psychedelia* is difficult to explain. To say that you create pretty coloured patterns with a joystick in time to music is a bit brutal — though not as brutal as one reviewer who described it as 'computer wallpaper'!)

What gave you the idea for the program? "It was really wierd. The idea had been with me for ages. I wanted to do for light what a synthesiser does for sound. I wanted to let people play light. I mean, it's such a concept, playing light! I'd always thought 'one day, when I get a big computer to play with, then I'll do it'. And then one day I went out for a walk and came back and started programming on the 64. I didn't have to work out the algorithms, it was as if I'd programmed it about eight times before.

"*Psychedelia* is the best thing I've ever created — it means more to me than anything else I've ever written. It comes right from my heart, something I've always wanted to do. And it doesn't stop there, I'm also working on a direct sound input, for a sound-to-light facility, that can be used to create a complete concert system. Given the right hardware, it'll blow minds at concerts."

On the 64's screen, there's a grid-like pattern on the screen. Is that the next game? "Yeah, I got fed up with the wave idea — why should attacks come in neat waves? This game will be based on shapeless waves. And nothing moves in a straight line, it's all gravity and inertia".

What of future Llamasoft games — more llamas, goats and sheep? "You'll be seeing a lot more of Rory the Hampster. It's about time he had his own game. Rory's based on a real hampster, by the way. I get lots of suggestions for games, but that one was so good, it was like they could see inside my mind! The real Rory's dead now, but his memory will live on."

Awesome.

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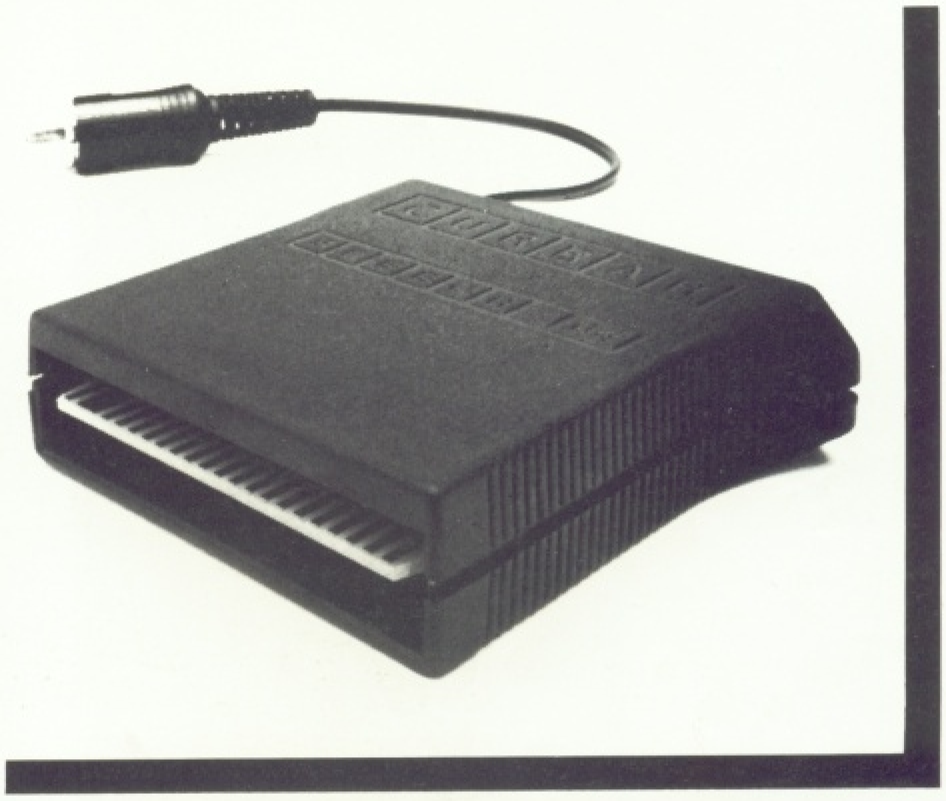
Currah Speech 64

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The Currah Speech 64 synthesizer and powerful amplifier uses the popular SP/0256-AL2 speech chip and has an almost infinite vocabulary. It has a text-to-speech interpreter for ease of speech output creation. Everything you wish to be spoken is entered in normal English, without special control codes or characters, it is therefore extremely easy to use. The voicing of the words is completely user transparent and the computer can carry on its normal running of a program while the speech chip is talking.

Speech Synthesis

The Commodore 64 speech synthesis utilises parts of the spoken word known as allophones. These are actual sounds that go to make up speech. The SP/0256-AL2 allophone speech synthesis technique provides the ability to synthesize an almost unlimited vocabulary. Fifty-nine discrete speech sounds (allophones) and five pauses are stored in the speech chip's internal ROM.



Text to Speech

Although there are only 26 letters in the alphabet, letters have a totally different sound when used in different words. For example, the 'a' in Hay is much longer and softer than in Hat. When you speak you automatically make adjustments because you know how a word should sound. Not quite so easy with a computer.

The 8K byte Read Only Memory contains all the instructions necessary for the SPEECH 64 to perform all of its more advanced functions including *Key Voicing * Text to speech conversion * Operating system. Having all the software on ROM means that Speech 64 is ready to use as soon as the computer is switched on. Unlike RAM, ROM is non-volatile, it retains the information inside even when the power is turned off.

The 500 gate 'Semi-custom' chip was developed in close co-operation with General Instrument Microelectronics and looks after all the hardware functions ensuring that the SPEECH 64 and your computer communicate properly.

Output via the T.V.

Analogue components together perform the functions of turning the speech output from the SP/0256-AL2 into audio level signals that can be fed into the C64 for output to the TV. They filter out the undesirable low and high frequency signals in the speech output and also amplify the signal to a suitable level.

New Basic Commands

There are 5 new Basic Commands which control all the functions of the interface. Making the Synthesizer very easy to use. You can even choose from a high or low voice and individual allophones can be 'intoned' to add character. Or use the synthesizer to create voice like sound affects.

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10 SAY ''HELLO''
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The above is an example of the Syntax for entering speech into the computer and shows how simple it is to use.

The instruction book gives comprehensive details and examples of how to use the interface both from machine code and basic.

How to Order

The Currah Speech 64 costs only £29.95. You can obtain your synthesizer through any good computer store or by completing the order form and returning it to:

dk'tronics Limited, Shire Hill, Saffron Walden, Essex. OR by telephone quoting your Barclaycard or Access number. Orders normally despatched within 24 hours.

C U R R A H

dk'tronics

Saffron Walden, Essex CB11 3AQ
Tel: (0799) 26350 10 lines

Please rush me

....[QTY] Commodore Speech 64 at £29.95 + £1.25 p&p
I enclose cheque/PO/Cash for Total £........................
or debit my Access/Barclaycard No.

Signature...
Name...
Address...

Choosing the right computer is a good start — but can you find the right software?



At SUPERSOFT we're very conscious of the fact that people who spend several hundred pounds on computer equipment are looking to do rather more than play Space Invaders.

Financial planning is a rather grand name for something you've been doing all your life – making ends meet! Perhaps if Mr Micawber had used **BUSICALC** he would have been able to balance the books a little better.

For home, club or small business use BUSICALC 1 should pay for itself in no time at all; for larger companies we recommend BUSICALC 3, one of the few really valuable programs that you can learn to use in a day.

Although your Commodore 64 is a powerful musical instrument you need to be a pretty good programmer to understand how it all works. Unless, of course, you buy **MUSIC MASTER!**

To use MUSIC MASTER requires no prior musical knowledge, though in the hands of an experienced musician it will prove an invaluable tool. You don't need to know the first thing about programming either! MUSIC MASTER is the musical equivalent of a word processor, remembering the notes you play and allowing you to replay and edit them as you wish.

INTERDICTOR PILOT is a space flight simulator. Nowadays simulators are widely used to train pilots and astronauts because – to be frank – it's a lot cheaper (and safer) than the real thing!

Imagine, if you will, life in the 22nd century: space travel is commonplace, and on the outskirts of the galaxy the first war between civilizations is being fought. A shortage of trained pilots has prompted the Federation to develop a computer simulation that allows raw recruits to gain experience without paying for their mistakes with their lives. With the aid of your Commodore 64 you too can learn to pilot the Interdictor Mk 3 craft. But be warned – this is no game!

SUPERSOFT

SUPERSOFT, Winchester House, Canning Road, Wealdstone, Harrow, Middlesex HA3 7SJ
Telephone: 01-861 1166

Other SUPERSOFT products include the **MIKRO ASSEMBLER** cartridge, the only assembler that's ideal for beginners yet powerful enough for the professional (most of our competitors use it!). The **VICTREE** cartridge adds dozens of commands to Basic including toolkit aids and disk commands; or on disk there's **MASTER 64,** another comprehensive package for the keen programmer.

Of course, we do also publish games programs, and with classics like **STIX, QUINX** and **KAMI-KAZE** in our range we are one of the market leaders. But we most enjoy coming up with the sort of programs that are going to be in use for months and years, not hours and days – the sort of programs that make you glad that you bought a computer – and glad that you bought SUPERSOFT!

You won't find SUPERSOFT products on the shelves of your local supermarket. But most specialist shops stock titles from our extensive range (and are prepared to obtain other programs to order). However you can also buy direct by sending a cheque (pre-paid orders are post free!), by calling at our offices, or over the telephone using your ACCESS card.